

OCT 12 1925

Old
Series,
Vol. LCONTINUATION OF THE
BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUBNew
Series,
Vol. XLII

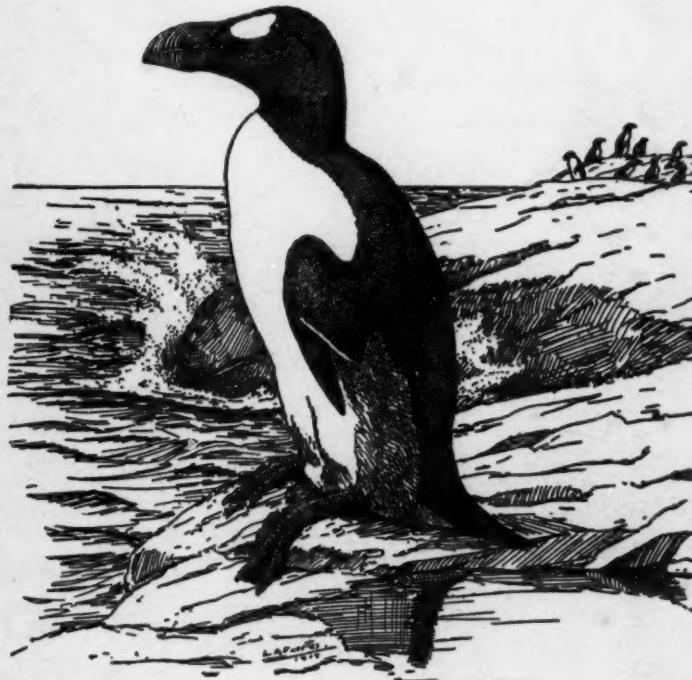
The Auk

A Quarterly Journal of Ornithology

Vol. XLII

OCTOBER, 1925

No. 4



PUBLISHED BY

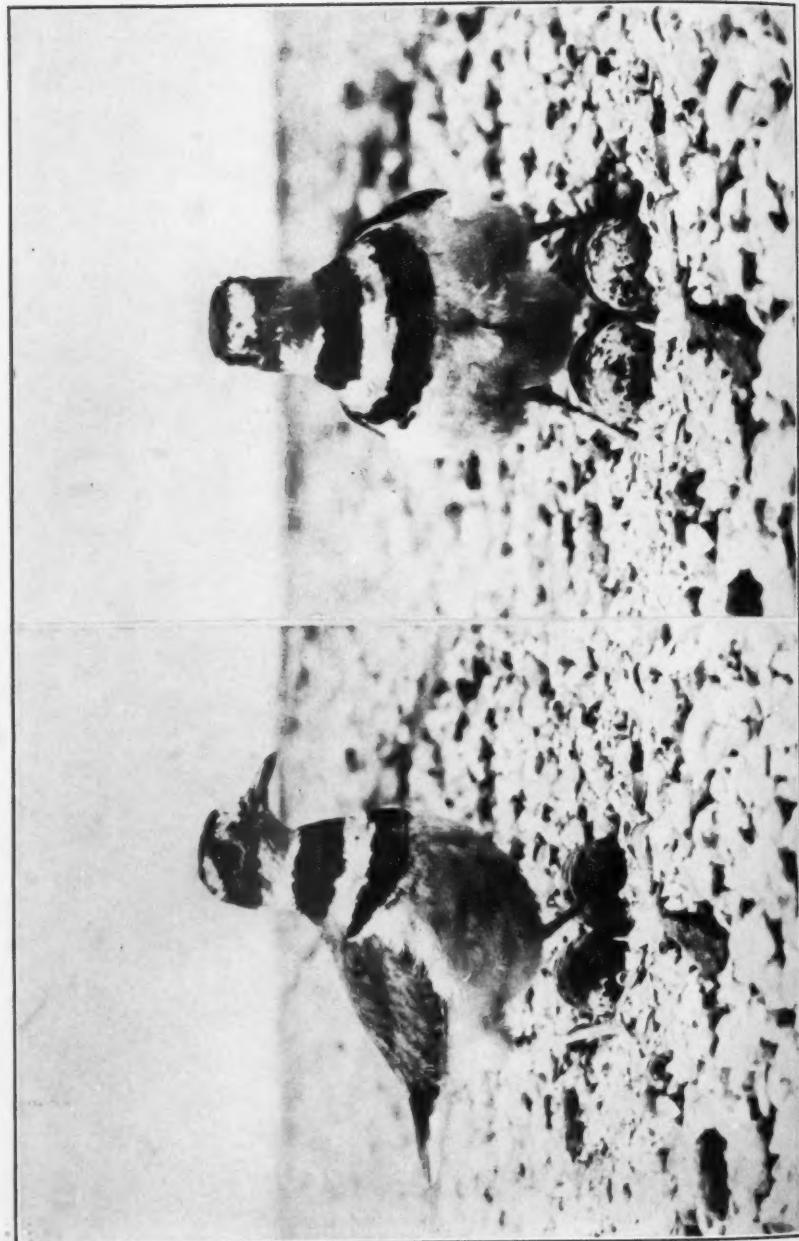
The American Ornithologists' Union

LANCASTER, PA.

Entered as second-class mail matter in the Post Office at Lancaster, Pa.

CONTENTS.

THE NESTING OF THE KILLDEER. By Gayle Pickwell. (Plates XXI-XXIII).	485
THE BLACK SWIFT AND ITS HABITS. By Samuel F. Rathbun. (Plate XXIV).	497
BREEDING OF THE HERRING GULL (<i>Larus argentatus</i>) IN MASSACHUSETTS. By George H. Mackay.	517
BIRDS OF THE BROWNSVILLE REGION, SOUTHERN TEXAS. By Ludlow Griscom and Maunsell S. Crosby. (<i>Continued</i>).	519
NOTES ON THE BIRDS OBSERVED IN THE LOWER RIO GRANDE VALLEY OF TEXAS DURING MAY, 1924. By Herbert Friedmann. (Plates XXV-XXIX).	537
SOME NOTES ON THE BIRDS OF THE BRANCHPORT, N. Y. REGION, 1923. By Verdi Burtch. (Plate XXX).	550
NEW BIRDS FOR PORTO RICO. By Stuart T. Danforth.	558
THE BIRDS OF THE DES MOINES RAPIDS. By W. E. Praeger.	563
GENERAL NOTES. —Double-crested Cormorant in the Connecticut Valley, 578; The Man-o'-war-bird in South Carolina, 578; The American Scoter in Florida, 579; Hudsonian Curlew near Youngstown, Ohio, 580; Avocet at Wallop's Island, Va., 580; Swimming and Diving Activity of the Spotted Sandpiper (<i>Actitis macularia</i>), 580; Diving of the Spotted Sandpiper, 581; Boreal Limicolaean Summering in Florida, 581; The American Egret (<i>Casmerodius egretta</i>) in Eastern and Central Pennsylvania, 583; The Egret in Connecticut, 584; An Egret and a Little Blue Heron in Rensselaer County, N. Y., 584; Diagnosis of a new Genus of Buteonine Hawks (<i>Coryornis</i>), 585; Kingfisher and Cooper's Hawk, 586; Northern Pileated Woodpecker at Cummingston, Mass., 586; Strange Nesting Site of the Chimney Swift, 586; Unusual Occurrence of the Chimney Swift, 587; Broad-tailed Hummingbird Bathing in Swift Flowing Mountain Stream, 588; The Dance of the Tangará, 588; White-crowned Sparrow at Charleston, S. C., 590; Henslow's Sparrow in Helderbergs, N. Y., 590; English Sparrows and Robins, 591; Yellow-throated Warbler on Quaker Ridge, Mamaroneck, N. Y., 591; The Tennessee Warbler at a low Altitude in Vermont, 592; The Short-billed Marsh Wren Breeding in Westchester County, N. Y., 593; Mountain Chickadee with an Adopted Family, 593; Ruby-crowned Kinglet Nesting in Michigan, 593; Changes in Bird Life in Amherst, Massachusetts in Twenty Years, 594.	
RECENT LITERATURE. —Bent's 'Life Histories of the North American Water Fowl,' 595; La Touche's 'Handbook of the Birds of Eastern China,' 595; Kuroda's 'Avifauna of the Riu Kiu Islands,' 597; Hachisuka's 'Comparative List of the Birds of Japan and the British Isles,' 598; Canon Raven's 'In Praise of Birds,' 599; Miller and Griscom on New Central American Birds, 600; Todd on New Birds from Brazil and Guiana, 600; Mathews' 'The Birds of Australia,' 600; Recent Publications by Beebe, 600; Grinnell on Introducing Alien Game Birds, 601; Esten on Nest Studies, 602; Kalmbach and McAtee's 'Homes for Birds,' 602; Sun Brothers, 602; The Buff-backed Egret in Egyptian Agriculture, 603; The Ornithological Journals, 604.	
CORRESPONDENCE. —A Plea for the Evidence, 612; Out of Print, 612.	
NOTES AND NEWS. —Obituaries: John H. Sage, 613; Dr. Arthur Gardiner Butler, 615; Henry Worthington Olds, 616; Richard Hunt, 617; Mrs. Sara Anderson Hubbard, 618; Col. Harry Copeland Benson, 619; James Britton Purdy, 620; 75th Anniversary of German Ornithological Society, 621; Dr. Alexander Wetmore, 621; N. Y. Meeting of A. O. U., 621.	



THE AUK:

A QUARTERLY JOURNAL OF
ORNITHOLOGY.

VOL. XLII.

OCTOBER, 1925.

No. 4.

THE NESTING OF THE KILLDEER.

BY GAYLE PICKWELL.

Plates XXI-XXIII.

DURING the spring of 1922, Killdeer nests found in the vicinity of Lincoln, Nebraska, presented such a variety of interesting data that considerable observations were made of them. Three nests, in all, were located in as many different environments and conditions.

On April 15, the first nest was observed south of Capitol Beach Lake just west of Lincoln. The nest was in an old rubbish heap along a road travelled by workmen who were busy near the shore of the lake. It was one of the latter who first observed the nest and it was he who directed our attention to it. The chief point of interest concerning this nest was the location. The eggs were in the usual depression in the ground closely surrounded by broken bits of glass, old bottles and other debris. In spite of their position, the eggs, with their dark mottling, harmonized so closely with their variegated surroundings that they were invisible until they were closely approached.

On May 20, another Killdeer's nest was found at the same lake but on a gravel beach. This nest had nothing but sand and gravel for a background and the little, flat stones that had settled down into the bottom of the nest made a pleasing mosaic pattern for the eggs to rest upon. The mottled eggs, against the intermingling hues of the tiny pebbles, made a combination in which nature showed beautiful handiwork. The eggs harmonized into that

background of sand and stones more closely than human hands could have accomplished by careful arrangement. This nest is interesting mainly because the writer was fortunate enough to see, and to secure photographs of, the four young birds before they left the nest.

On April 14, a party of engineers, who were surveying the State Fair Grounds just north of Lincoln, reported a Killdeer's nest on the race track grandstand. Dr. R. H. Wolcott of the Department of Zoology, of the University of Nebraska, to whom the report had been made, hastened to the Fair Grounds the following morning, but the nest had been destroyed and the eggs scattered for some distance over the roof. One egg was, he states, fully seventy-five feet from the site of the nest. The reason for this destruction is not known unless the wind can be held accountable.

While on the roof, Dr. Wolcott noted that a number of depressions had been made in the coarse gravel covering. This indicated that the bird had either nested there in previous seasons or had experimented considerably before the final nesting site had been chosen.

The roof was not visited again for several weeks, but on May 4, while in the vicinity, Dr. Wolcott and I climbed upon the roof to see if the Killdeers had renested. No bird was seen nor were any eggs located although the evidences of previous nesting sites were observed. Thinking that the bird had abandoned the location we clambered down and were just leaving when the Killdeer was noted coming onto the roof. We crept back very cautiously and saw the bird just as she was slipping off the nest. She flew off over the edge of the roof as soon as we had pulled ourselves up through the trap.

The nest was located in the portion of the roof which we had looked over only casually before, since it was on the opposite end from that occupied by the previous nest. That explains, perhaps, why we did not see it upon our first examination though, considering the wonderful blending of the eggs with the coloration of the roof, our oversight could easily be excused.

The grandstand is a very large structure, approximately 400 feet long by 80 feet wide. The roof is about fifty feet above the foundation and has a very gentle slope. The covering of the roof is

composed of a tarred paper heavily weighted with crushed stone. It was in a depression worked out in this rock covering that the nest was located. The trap that gives access to the roof is about in the center of the lower edge and therefore about 150 feet from the Killdeer's nest. The position of the trap is important for from this many observations and calculations were made.

The following day, May 5, the nest was visited. The eggs had been moved slightly in the intervening time and one of them was lying with its point away from the center. Subsequent observations and sketches showed not only that the eggs were moved every twenty-four hours between 11:30 A. M. and 3:00 P. M. but that it was not at all unusual to find them with their points to one side or away from the center of the nest. (see p. 495)

This day the trap in the roof had been approached very carefully and the bird was discovered just as she was leaving the nest. She slipped off and ran to the northeast corner of the roof and disappeared over the edge just as we came up through the trap. While we were photographing the nest the bird returned to the opposite end of the roof and teetered softly. She allowed my friend and myself to approach within a few feet this time before flying. After she was flushed she described a large semicircle back to the end of the roof where the nest was located. We returned to the nest to sketch the position of the eggs and the bird retreated to the end of the roof without flying.

After sketching we took up a position about fifty feet distant. With extreme care and caution the Killdeer maneuvered toward the nest. She would zig-zag back and forth, now advancing, now retreating. At the slightest motion on our part she would crouch down and remain motionless.

While we were in that position the bird did not come entirely to the nest but when we doubled the distance between us and the eggs the bird came rapidly to the nest and after a little cautious teetering up and down settled over it, still facing in our direction. In all we watched her for about fifteen minutes from the two positions before she finally reached the nest.

The trap cover, which had been used as a tripod for the camera, was left within a few feet of the nest. Since this did not disturb the bird greatly I hoped to substitute a camera, or box which

would contain the camera, in order to obtain pictures of the bird herself. We left the roof about four o'clock.

It was not possible to visit the nest on May 6, but on May 7 I went prepared to stay throughout the day, if need be, to secure pictures of the Killdeer herself. Upon coming through the trap the Killdeer was observed sitting upon the nest. She vacated immediately and slipped off over the corner as before when I approached.

The trap cover, which had been left near the eggs, was utilized to brace the camera and a burlap sack was placed over the machine and liberally sprinkled with pebbles from the roof. (Later experiences showed, however, that this caution and elaborate preparation were entirely unnecessary.) A thread was then stretched from the shutter release to the trap, a distance of about 150 feet.

After having stationed myself near the trap the Killdeer was noted upon the roof (the bird had not been seen returning), some fifty or sixty feet away from the nest. This bird, judging from later actions, was determined to be the male. He immediately began to go toward the nest, advancing rapidly until within a few feet. The bird seemed suspicious of the arrangement near the nest and stood teetering anxiously a rod or so away. He then described a large semicircle about the nest, investigating.

While watching this bird inspect the new arrangement I saw the mate also come and alight upon the roof near the position where the former bird had been observed. It was this second bird which finally reached the nest and covered the eggs. The Killdeer carefully faced the camera throughout. In the meantime the male had disappeared but was observed a few moments later near the end of the roof.

After the female bird had reached the nest I attempted to snap the shutter but in the operation the string broke and I was not sure that the shutter had been released. The string was repaired, the film wound and I stationed myself about midway between the nest and the trap, this time within seventy-five feet. The bird during this time had vacated the nest but had not left the roof.

To my surprise the bird came back rapidly to the nest, though I was much nearer, and covered the eggs within a very few minutes. At no time during all the observations upon the roof was any

attempt at concealment made. The roof was practically bare, excepting a few racks for light wires, and consequently one was in full view of the bird on any portion of it. Lying prone, however, did much to allay the fear of the bird.

Upon resetting the camera a second time I noticed that the bird was simulating distress. This it had not done before. It would run up within fifty or sixty feet, crouch down, spread out the tail feathers and display the rufus coloring of the rump. The wings would be drooped to one side and the whole appearance was one of helplessness and distress. This simulation was not accompanied by any fluttering or limping. The bird would teeter occasionally and wind up with a sharp "k-k-k-k-deer." This cry almost always preceded the distress simulation as well.

After having arranged the camera I stationed myself within twenty-five feet of the nest. While this close the bird would not come quite within range of the machine but ran back and forth very near, now and then crouching down, rocking back and forth, teetering.

At this time my attention was drawn to the male bird who was going through the same distress performance as that of the female though at no time did he approach so closely.

Finally I increased the distance between the nest and myself to about forty feet. Almost at once the bird came to the nest and just before she covered the eggs I snapped the camera. The bird started a little at the click but did not leave.

Six exposures were taken, in all, with the camera, at one time, within two feet of the eggs. During the last exposure I was within twenty-five feet. I left about 2:00 P. M. having spent three hours upon the roof.

May 8, 9, 10 and 11 added but little to my observations for only sufficient time to run out and sketch the nest could be spared. Each time the brooding bird would slip off, as soon as I came up through the roof, and retreat to the corner. She flew, generally, before I reached the eggs but occasionally she would run back and forth along the edge before taking flight. Once or twice on these days she returned to the roof before I left. She alighted usually about the central part of the roof and if I then came toward her she would retreat to the end opposite the nest.

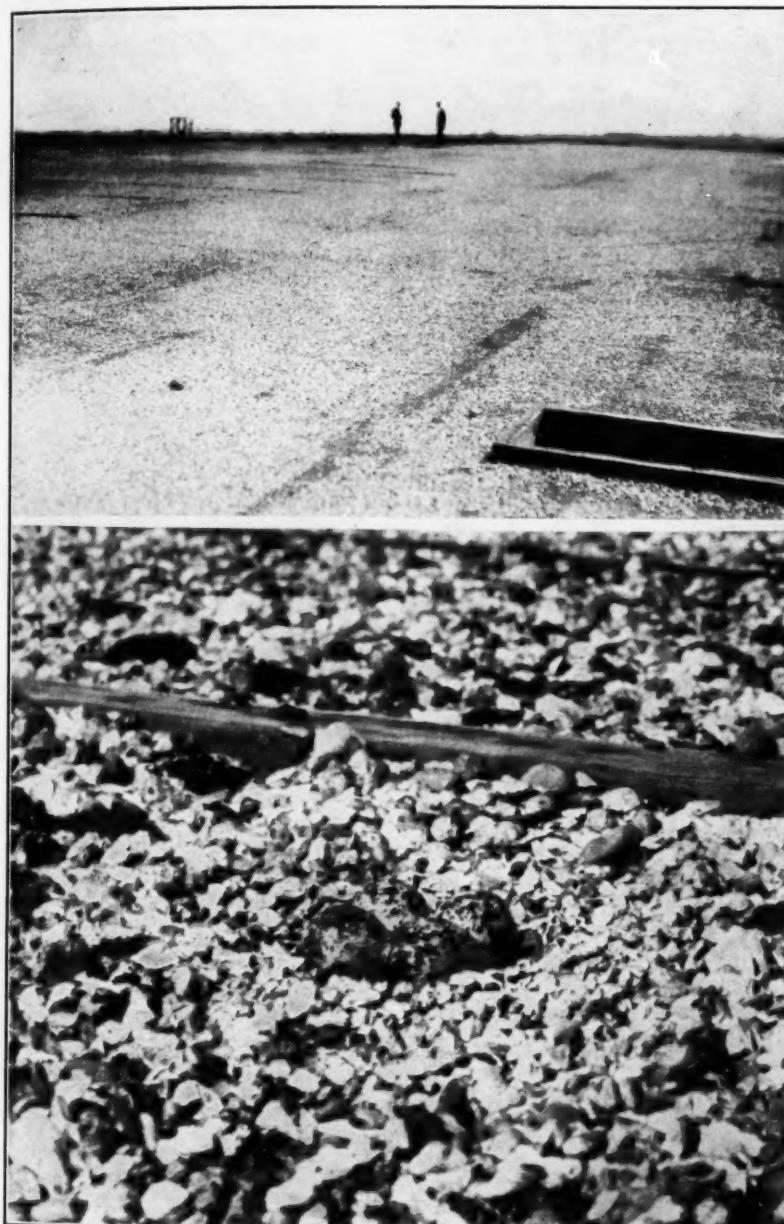
The bird returned very quickly to the nest after the observer had left the roof. On May 12, after making the usual notes, I let myself down through the trap to jot down some observations. This required less than two minutes and when I looked up again the bird was on the nest although she had not returned to the roof before I had descended.

On May 13 the roof was not visited but on the 14th extended observations were made. The Killdeer did not leave the nest this time when I looked up through the trap and she was watched for some time before she was aware of my presence. The male was on the roof too (I presume it was the male), and he ran back and forth along the east side occasionally coming close to the nest. Although the two were watched thus for over half an hour the male did not relieve the female from her duties. At no later date was I able to determine, definitely, whether the male aided the female in the business of incubation though much evidence pointed that way.

When I finally came up through the roof the female slipped off the nest as before and retreated to the northeast corner. The male remained motionless for some time near the nest. During this time he preened himself apparently oblivious to my presence. The female, in the meantime, was watching me closely. The male presently flew off to the north, for no apparent reason, but the female remained motionless upon the roof. When I approached the nest she ran nervously back and forth along the eastern edge several times and finally left just as I finished sketching.

On May 15 the results were similar to those obtained upon previous occasions. This time a possible explanation for the peculiar change in attitude of the bird during each visit came to me. Each time as we had looked up through the roof the bird had quickly slipped off the nest while the observer was still at a considerable distance, at least 150 feet. Yet if one stayed for any length of time the Killdeer would return to the nest though the observer be within twenty or thirty feet. This was a great inconsistency.

The instinct of nest concealment by furtive abandonment is exhibited by many shore birds for the eggs are all protectively colored and the nests are best hidden when uncovered. This



1. ROOF OF GRAND STAND ON WHICH KILLDEERS NESTED.
2. NEST WITH EGGS.

1960
1961
1962
1963

instinct was exhibited by the Killdeer in the most inconsistent of circumstances. The bird always, without any exception, slipped away upon our first approach. The concealing instinct (which is a secondary development of parental instinct following the acquisition, undoubtedly, of camouflaged eggs), is inhibited by that of solicitude if the bird is kept away from the eggs too long and she then returns even in the face of the first instinct and the most terrifying of circumstances. Thus, though she always left at first approach when one was over 150 feet away she would sometimes return when one was within twenty feet. Definite experiments were not made to determine how far an observer must remove himself or how long he must be concealed before a normal exhibition of these two instincts could be reobtained, but certainly the minimum time for the reassertion of the concealing instinct was not more than ten or fifteen minutes and probably much less than this.

In company with two others I visited the nest early the morning of May 16. When first observed the bird was facing toward the west, the direction of the wind and not toward the sun. (She usually faced into the wind which came very powerfully across the roof.) The bird arose from the nest while one of the party was observing it but immediately covered the eggs again when he withdrew his head within the trap. We all then climbed up and the bird slipped off as before and soon left the corner of the roof.

In keeping with that first secretive departure from the nest the Killdeer would make no sound but when forced to fly after a return she would protest with a sharp "kill-deer." The instinct first exhibited would succumb to that of solicitude for the safety of the nest in about five minutes; sometimes more, often less. When this occurred the bird would make no effort at concealment.

The nest was not visited on May 17 and, accordingly, when I set out on the afternoon of the 18th I had a strong premonition that something might have happened during my absence, for the eggs had been incubated for two weeks within our knowledge. When I looked up through the trap, therefore, I was not surprised to find that the Killdeer was not on the nest. And when I approached I found that the eggs were gone and the nest cavity partly filled with pebbles. Though the roof was searched carefully no trace of

eggs, egg shells, young birds or adults was to be found. This was a great disappointment for one of the main objects of the observations was to ascertain how the young birds were removed from the roof. The young could have remained only a few hours at most after hatching.

My attention was attracted shortly, however, to a Killdeer about fifty yards southeast of the grandstand upon the ground. The bird seemed to be wandering aimlessly about a certain area there, running rapidly a few feet, stooping, now crouching down and remaining motionless, now arising and going through the entire performance again. Presently the bird arose and flew about 150 yards northeast of the grandstand and alighted near a deserted railway. The other bird, I noticed, was near this location. Both birds seemed highly excited for they were seldom quiet for more than a few moments at a time and they kept up a persistent "killdeer" intermingled with other calls. After a moment the first bird returned to the position I had first noticed near the southeast corner of the grandstand. From these movements I decided that the young had reached the ground successfully and were still in the vicinity.

I then descended from the stand and walked over to the old track hoping to find one of the young birds there. Upon my approach the Killdeers became greatly excited and performed for me all of the antics that they had ever gone through upon the roof. In addition they flew wildly back and forth, now alighting here, now there, occasionally, spreading out the tail after alighting and uttering a low "k-k-k-k-k" which was wound up with a sharp "k-kak." For nearly two hours they continued this commotion without betraying the position of the young bird. In despair I was about to leave when my attention was called to a weak cry of the Killdeer that seemed to come from some distance behind me. Upon searching the ground under an old loading platform a short distance behind me I found a little Killdeer tottering weakly over the ground. The long wait had taxed his patience too severely and he had betrayed himself. The tremendous solicitude of the old birds was now explained: I had been within fifteen feet of the young one all the time.

Later I learned that waiting was a better method than vain

searching for the concealed young. The protective instinct will, ultimately, give way to hunger or a desire for parents and the young then will move and call a weak "killdeer" which betrays their position.

For a moment I watched the parent bird who had doubled her wailing when she saw that I had discovered her treasure. She flew now and alighted on the loading platform immediately above my head, now on the rails not ten feet away, time and again crouching down and spreading out her wings and tail feathers in a semblance of helpless distress. Her loud "killdeer" had been softened to a low, plaintive "k-k-k-k-k" and her distress was evidently very acute. The mate was not observed near at this time but was discovered a moment later at the position where the Killdeer had first been discovered. A moment later I searched this place near the stand for the other young but, though one of the adult birds was there to bewail my approach, I did not succeed in finding them.

I had believed the Killdeer story practically closed, but on May 19 while watching a Forster's Tern over a small pond about 100 yards from the grandstand a young Killdeer was seen again. This time the bird was found by searching the location where the adults were displaying the greatest solicitude. The distress of the adults was as great as it had been upon the previous occasion.

Again on May 21 the Fair Grounds were visited and to our pleasure we heard the adult birds crying about a second small pond about 150 yards from the last location but not over fifty yards from the loading platform where the young bird was first seen. After watching the adult birds for some time a young Killdeer appeared beside them on a little pile of rubbish. The old bird did not seem to heed the little one and it ran here and there beside her.

A moment later two little Killdeers were noted on the same mound. One of the parent birds in the meantime was busily feeding in the water and along the edge, picking up insects which were swallowed. At no time did the parent birds carry food to the young in their beaks. The Killdeers were observed closely for more than an hour.

Four days later, May 25, after uninterrupted rain the race track

ditch just north of the grandstand became filled with water and here we found the parent birds. This was not over 100 yards from the small pond where the birds were last seen. After a careful but fruitless search of the area we stationed ourselves where the solicitude of the adult Killdeers was greatest in an endeavor to outwait the patience of the young birds. We were soon rewarded by hearing the faint "killdee, killdee" of one of the little birds. Even then some search was necessary before the youngster was discovered, though it was not six feet from the spot where I had been standing for thirty minutes.

The bird was very small though all evidence seemed to show that it was of the grandstand clutch and it was still so weak, after eight days from hatching, that it tripped itself several times in trying to escape us. It is my belief that these birds did not reach maturity because of disease resulting from the unusual weather.

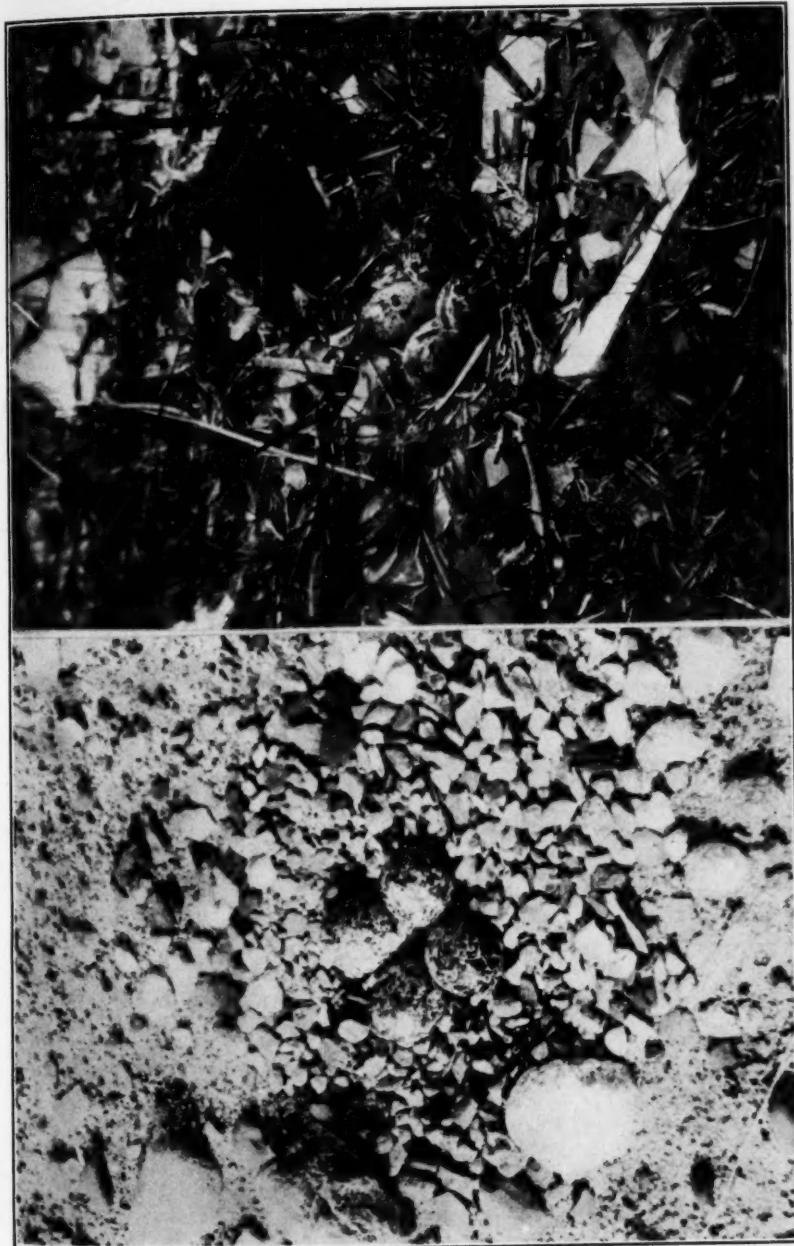
On later visits the parent birds had quitted the vicinity and the young Killdeers were never seen again.

June 11. Happening in the vicinity of the Fair Grounds this day I was persuaded to climb to the grandstand roof again to see if the Killdeer had renested. When I lifted the trap the bird was seen standing near the center of the roof. A moment later she slipped off over the edge, as was her custom, but returned almost immediately. I located the nest near the position where the bird was observed and noted that the clutch was complete and that incubation had already begun.

June 28. I had not had the time to spend upon this nesting that had been spent upon the others and, consequently, I was not greatly surprised to find that the Killdeers had just finished hatching. Three were yet in the nest but two left with the old bird and tottered away on insecure legs for a short distance. The third was not quite dry.

Very early on June 29, the following day, I visited the Killdeer's nest hoping to observe the manner in which the young were removed from the roof. But there were no birds, neither adults nor young, on the roof and there had been but little wind the preceding night. The adult birds were heard near the drainage ditch in the race track meadow.

The Killdeer did not nest again upon the roof during the summer

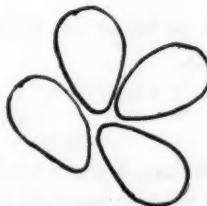


1. KILLEDEERS' NEST ON PEBBLED BEACH.
2. KILLEDEER'S NEST ON RUBBISH HEAP.

N.
↑
S.



MAY 4. 5 PM.



MAY 5. 4 PM.



MAY 7. 11 AM.



MAY 8. 11 AM.



MAY 9. 3:30 PM.



MAY 10. 11:30 AM.



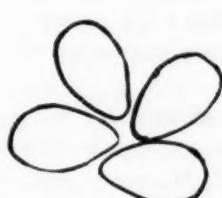
MAY 11. 3:30 PM.



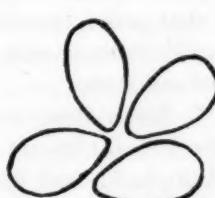
MAY 12. 4 PM.



MAY 14. 4 PM.



MAY 15. 5:45 PM.



MAY 16. 8:30 AM.

POSITIONS OF KILLDEER EGGS IN NEST FROM DAY TO DAY. PRIOR TO 11:30 A. M., POSITION WAS THE SAME AS AT 3 P. M. ON THE PRECEDING DAY (SEE MAY 9 AND 10, 15 AND 16), INDICATING THAT THEY WERE TURNED DAILY BETWEEN THESE HOURS.

of 1922, and, so far as can be learned, the roof was not occupied in 1923 or 1924.

SUMMARY.

1. The Killdeer, a shore bird, was found nesting, in the summer of 1922, in a rubbish heap, on a gravel beach and on a high pebbled roof.
2. The Killdeer's eggs are so colored that they have good harmonizing qualities for all of these diverse nesting sites and seemed to be equally well protected by their markings in all of them.
3. Some of the Killdeer brood were successful in reaching the ground from the roof nest.
4. It is believed that the adult carried the young down from the roof for the shallowest fall would have been more than forty-five feet and it is unlikely, though not impossible, that the young could have survived this; moreover the young were off the roof within twelve hours after each hatching.
5. The Killdeer laid at least three clutches of eggs during the season, extending from early April to the last of June, and she may have reared two broods. (It is inferred that the same pair of Killdeers were responsible for all of the nests upon the roof. This is a reasonable inference because of the unusual position of the nests and because a thorough survey of the surrounding territory showed not a single pair of Killdeers nearer than a half mile.)
6. The Killdeer displayed an invariable reaction upon the approach of an observer to the nest, viz.: The brooding bird would slip off, without a sound, at the distant approach of a stranger but if that person remained but a few minutes near the nest the bird would, inconsistently, return and betray the nest with much noise and solicitude.
7. Minor observations showed that the eggs in the nest did not always point inward; that the eggs were turned regularly between 11:30 A. M. and 3:00 P. M., see p. 495; that the male joined in with the solicitude displayed by the female but was not observed to brood.

Department of Zoology, Northwestern University.

THE BLACK SWIFT AND ITS HABITS.

BY SAMUEL F. RATHBUN.

Plate XXIV.

THERE appears to be somewhat of a dearth of information in regard to the habits of the Black Swift (*Cypseloides niger borealis*), and this is not surprising when the difficulties attendant to a study of the species are considered. Within its range the number of ornithologists is somewhat limited, the bird itself does not seem to be at all uniformly distributed, and there is also in connection with it what may be termed a degree of elusiveness. These reasons then, may perhaps explain why there is lacking a greater knowledge of its habits.

In studying most of the species of birds some degree of certainty exists, and one has more or less regular contact with them during definite periods, but this to an extent is not the case with the Black Swift. On occasions one may come across these birds most unexpectedly and then again they may not be seen for days, and this at a time when the species is restricted to a defined habitat. Possibly this may be accounted for by its apparent unlimited power of flight, resulting in a wide range each day over some portion of its territory and this generally at a height that enables it to escape the notice of the observer.

Our first acquaintance with the Black Swift was many years ago and for a time thereafter we regarded the occasions on which it was observed as rather noteworthy, but later changed our opinion for as more attention was given the conditions under which the birds were seen, an inkling was had as to when and where they were likely to be found. But this required patient observation extending over a long period of years and we still at times find ourselves at sea. Yet there is a fascination in connection with the Black Swift that seems to be lacking in most of our other species, for it is not only uncertain in its occurrence, but also a bird whose life history should be better known, and these very qualities offer an incentive to tempt the observer to continued effort.

The range of the Black Swift is given as "Western North America. Breeds from southern British Columbia and southern Colorado to Central Mexico; winters in southern Mexico,"¹ the type of the species having been taken at Simiahmoo Bay, Puget Sound.² Our observations in regard to this Swift have been made mostly in the region that extends from the Sound eastward to the Cascade Mountains, although the entire territory covered extended from nearly the summit of this range to the Pacific Ocean itself.

During the vernal migration in the region about the Sound the first Black Swifts will be seen sometime between the fifteenth and the twenty-fifth of May. Quite frequently during the latter half of this month there will occur a spell of foul weather, and the arrival of the birds seems to be coincident. When this fact was first noticed it was regarded as incidental, but as it occurred with a degree of regularity our attention became attracted to it and we then gave the matter especial attention. Soon after the first of May we began to closely follow the weather conditions of this region and also those existing far southward, and after a time a good idea was obtained as to when to expect the arrival of the Swifts. In fact, on several occasions our expectations were confirmed almost to a day.

It is during the first week in June that the Swifts remaining in this region appear to establish themselves for their summer stay. This is inferred because, without exception, the first arrivals and those seen on a few subsequent days invariably pursue a general northerly course. Then this route changes to one almost due east, directly towards the Cascade Mountains; and it is noticeable that this latter is the one thereafter followed during the summer months. In certain localities during most of June one is quite apt to see companies of these Swifts hawking about for their insect food, and we have likewise found that they have what appear to be favorite hunting grounds or sections in which a person may reasonably expect to find them more frequently than in others. The Swifts that remain in this region undoubtedly nest far within the Cascade range, and each morning from their chosen retreats make a trip to the lowlands where they seem to stay most of the day. In one

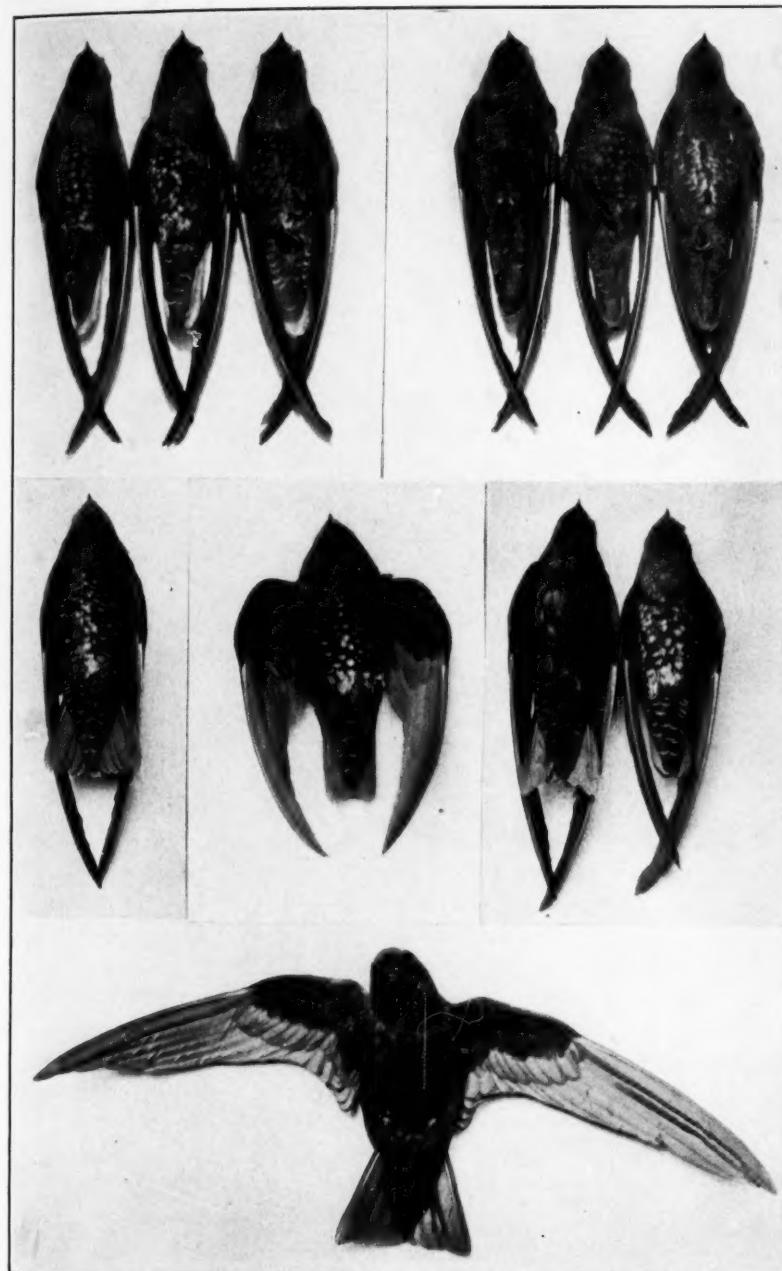
¹ The A. O. U. Check-List of North American Birds, 1910, p. 200.

² Ibid.

locality not far from the Sound where we have often found them, their arrival may take place anytime following a half hour after sunrise although on occasions it will not occur until rather late in the morning hours; and here they remain either for a short time or for an extended period. We have also noticed that until about the middle of June the number of Swifts associated is much larger, as if all within a certain territory had united to drift above it back and forth, an occurrence that is not soon to be forgotten. And such a sight it has been our fortune to see at times, and one instance we relate. For two successive days early in June the weather had been cool with intermittent light rains and the following day was quite stormy. Early on this latter day we went to Lake Washington on the outskirts of the city with the expectation of seeing the birds, and above its surface as far as we could see the Swifts were flying. Many were likewise above the shore of the lake and, at times some passed close to where we stood. While crossing the lake on the ferry a distance of about four miles, the birds were flying on all sides while others were in sight to the limit of our vision. The greater number were just above the water's surface barely skimming it, but it was noticeable that none ever touched it which is so commonly the case with the Swallows. I stood on one side of the upper deck of the boat about twenty feet above the water, and many a Swift would glide by just below. One does not often have the chance to look down upon a Black Swift, but such was frequently the case on this occasion. At times some of the birds would pass on a level with my face, and so near, that I could plainly see their glistening black eyes and the turning of their heads from side to side on the lookout for insects; for all judging from their actions were intently engaged in feeding. The same conditions prevailed on our return across the lake, and once again we crossed and returned to view the sight; and during all the time consumed there was no diminution in the number of the Swifts, they being distributed over the entire route we followed as far as we could see, no estimate of their numbers being possible. On this occasion the flight of the birds was not rapid, as a rule being merely a repetition of short glides with frequent twists and turns, often one would tower by a few quick movements of the wings and then with a sharp turn it would once more descend

to its former level. Frequently a number in company would rise to a height of two or three hundred feet and circle about for a short time before again descending to the lower level where the greater number were. And during all this space of time, nearly four hours, a light rain fell.

By the middle of June, the Swifts instead of associating in such large numbers seemed to have separated into colonies of varying sizes, each of which, during the summer months, appears to follow a certain more or less defined route every day, which the birds used each morning when flying from their mountain resort to the lower country, returning over it with equal regularity as the evening drew near. These journeys have the appearance of being long excursions, but the wide distances mean little to this Swift with a power of flight to which there seems but small limitation. The valley of the Middle Fork of the Snoqualmie River, some thirty miles almost due east of Seattle, is one such route that we have noticed the Swifts following; and here at various times during several summers we have watched the daily flight of a colony of these birds that numbered nearly one hundred and fifty. The spot from which our observations were made was an open one, a so called prairie, lying between two forks of the river and nearly surrounded on three sides by the mountains; but as it expanded to the westward in the broad reach of the river that here began to enter the lower country it had a wide visibility and thus afforded a most favorable place from which to view the actions of the Swifts. We found that near the middle of June it was a habit of these birds each morning to stream down the river valley and then along toward evening a return movement would take place. On occasions we were at this spot before the break of day and at the time of sunrise the first Swift would be seen far up the valley between the mountain ranges, coming in rapid flight down the river. Sometimes two or three would be in company, these followed by others at intervals, but the earlier ones were always far apart and straggled past from time to time at different heights. And this would be the case until perhaps twenty or more had flown by, all following the same course which was due west and down the river valley, their flight rapid and direct as if there was some objective point in view. After the passage of the earlier



BLACK SWIFT (*CYSELOIDES NIGER BOREALIS*).

Top Row: ♀ ♀ July 6, 14, Aug. 2. June 22, July 6, 6.

Middle Row: ♀ Aug. 2; ♀ Aug. 2; ♂ July 24; ♀ Aug. 2.

Bottom: ♂ July 6.



birds often a space of time would elapse before any more were seen, and then numbers would appear which remained gliding and circling above the locality. Sometimes we stayed the greater part of the day in or near this place and found that the larger number of the Swifts would at times confine themselves to a limited part of the section, drifting to and fro. Then when evening drew near the birds began to move up the valley of the fork and at this time it became noticeable that their numbers were increased by the arrival of others from the west. It was as if some of the Swifts always had a wider range, but returned near the close of the day from their roving, and just as twilight fell, the last would be seen as stragglers, fast flying to their mountain haunts. The character of the weather made no change in the actions of the birds. Wind or calm, rain or shine, there was no variation in the routine of their habits. On fair days the Swifts flew high—often to the limit of sight, and when it rained they would descend to a height of from two hundred to five hundred feet.

This habit of the Swifts to follow the same route in the mountains, when flying to and from the lower country, continues until the time for them to migrate. But in July and the early part of August they appear less sociably inclined, for as a rule they are seen in smaller numbers, and on occasions it is not unusual to see detached pairs, although these in turn may not be found ranging far from others. And at this time the birds are more scattered over the particular area within which they are foraging or gliding about; they are not so often closely together as during the earlier part of summer or shortly prior to the time when they migrate in autumn. During the midsummer, too, the Swifts are less frequently seen ranging widely over the region, which leads to a belief that they restrict this tendency somewhat during the time of nesting, for though at this period we do occasionally see these in the section about the Sound and far from the mountains, the number is always limited.

At this time also a change is seen in the manner of the return flight near the close of day. Now the birds straggle much and linger little on their way, the larger number flying quickly by following a more or less direct course. They will pass as single birds or sometimes a pair, or a few widely apart, and intervals of time

elapse when none are seen at all, and their numbers are decidedly less; a possible reason for this last being that a portion remain about their breeding places, and fail to make the daily excursion.

About the middle of August a slight increase will be seen in the number of the Swifts and as the days pass their number grows. This increase must represent the young of the year that have joined the adults and are preparing for the migration that soon takes place. By the last of this month large numbers of the birds in company may once again be seen at times roaming about the lakes in the vicinity of the Sound, where they so regularly occur at the time of the arrival of the species, and these must represent more than a single colony. It seems that when the young are on the wing the Swifts return to their wide ranging habit and association in large numbers, and when this occurs then one knows that the time when they will migrate is not far away.

Black Swifts appear to mate in June. There is no sign that this has taken place when they arrive in May, as then the birds are always seen in companies and not in pairs as is subsequently often the case. But soon after they have become distributed in colonies about the region and begin to make the daily flight to and from the lower country, indications of mating are seen. All may be gliding about when suddenly—perhaps from a far height, a Swift will dash at one beneath, this followed by erratic flight actions on the part of both and their disappearance in the distance. This dive I have seen made with such speed that the eye could scarcely follow it, and during the time that the birds are darting and twisting about it is a common thing for them to descend almost to the ground. Actions of this character are most frequent in late June and the early part of July, but continue to occur for a limited time thereafter, and soon many of the Swifts appear to be mated, for though all may be more or less associated as they fly around, a pair often keep quite close together.

During the latter part of June the Swifts begin to breed, as is shown by an examination of a number of birds collected in late June, throughout July, and in early August. And it may be of interest to mention, that with one exception, none of the females taken during the period named, showed any denudation of the feathers of the breast or abdomen. This bird was taken on the

second of August, and the denuded area was narrow, extending along the keel of the sternum to the vent, and becoming slightly wider on the abdomen.

Where the Swifts breed within this region as yet we do not know; but it must be well within the mountains and in the more elevated regions. During the summer months they have been seen about some of the mountain lakes and also above the valleys of some of the mountain streams that are at a considerable elevation. Their flight in the valley of the fork of the Snoqualmie River, already described, has likewise been noted a long distance up that stream the headwaters of which are not far from the main divide. As it is very rugged in that region, there would then be no lack of suitable places where these birds could nest and there is no doubt that in such localities the species will eventually be found breeding.

This Swift is generally regarded as a silent bird, and to an extent this is correct. During its spring migration and shortly following, a period when the birds are associated in numbers, we have watched them for long spaces of time and always a perfect silence seemed to prevail among them. And this apparently is the case until the time comes when by their actions they show that they are mating. Even now their chatter-like note is but seldom heard, although invariably it is given at the time when one dashes at another, and this often proves the case when a pair may happen to fly in close company. During the midsummer we have heard their rapid notes as the birds passed in flight near the close of day, and in the autumnal migration when rarely one would make a quick dash at another. But these instances are uncommon and the species can properly be regarded as quite silent, being very different in this respect from the Chaeturine Swifts whose shrill twitterings are so frequent as they fly about. And the chatter of the Black Swift somewhat resembles that of these smaller ones; it being as rapid, but smoother in quality and more rolling, in fact rather pleasing to hear.

In all its flight actions this Swift shows a power and an easy grace that win our admiration. It seems to live upon the wing, and to restrict its flight most of the time to a considerable elevation, the height being seemingly influenced by the character of the weather. It is generally the case that during the continuance of

a low atmospheric pressure the Swifts will not fly very high, but when this condition ceases they then ascend. At the time of high pressure the Swifts are often at a great height and it is not uncommon to see them gliding at the very limit of vision. At such times so high are some of them that even with the aid of field glasses they show but faintly against the sky. It would be a mere surmise as to the height that they attain, several thousand feet certainly, and as some have even disappeared from view, when the glasses were in use, one has no knowledge of the height to which they go. On a bright summer day to see these dark birds circling far above is always captivating. Should the sky happen to have clouds some of which are white and shining, the Swifts as they wheel across their glistening surfaces, are plainly outlined, but seem to fade insensibly from view when in turn they cross the open spaces of the sky. At such times it is the constant shifting view with the seeming change in distance of the gliding Swifts that adds to our interest when watching them.

It sometimes happens that when the birds are widely scattered at a great height, all will quickly come together within a very limited area and glide and circle without uniformity either in speed or direction, the paths they trace now forming an intricate maze. More than once, too, I have seen some of them glide long distances against the wind, their flight being slightly undulatory, while they seem to rock on the breeze.

When hunting its insect food the Black Swift does not appear to circle much, but describes arcs, some of which will end in slight ascents made by rapid movements of the wings. Sometimes just at the termination of the rise, the bird hangs motionless as if in balance, which is often followed by a short descent or drift as the bird slides down the wind. Should there happen to be somewhat of a breeze the Swifts are apt to quarter into it, then drift off diagonally, often following with a short quick flight ending in a wide swing. And all these actions are repeated endlessly and with marked ease.

But this bird has also the power of very rapid flight. Infrequently it happens near the close of day that some will be seen hastening to their mountain retreats, at such times being widely scattered and flying rather low. With strong and rapid wing

beats an almost direct course is followed, and but a few seconds elapse from the time one is first seen until after passing it fades from sight in the distance. And when thus observed in full flight, the power shown for fast flying never fails to impress the beholder.

The position of the Black Swift's wings as it glides or circles is dihedrally down. We have never seen any variation from this, and in this respect a contrast is shown by our *Chaetura*, whose wings are often highly elevated when sailing short distances or on entering their nesting places or roosting resorts. This wing position of the Black Swift seems worthy of mention, although it may be possible that it varies at times under conditions with which we are not familiar.

Our conclusions as to sexual variation in the species are based on an examination of thirty-one of these birds, all but one being adults, taken at various times during the summer months and early in September. Four of these were secured at Bellingham, Washington, by Mr. J. M. Edson, to whom due acknowledgment is made; the remainder we collected in different parts of the territory about Seattle. Although the number is somewhat limited it gives a good idea of certain definite differences existing between the sexes.

The males are larger and darker than the females. As a rule their sooty underparts from the breast down lack any trace of light tipping on the feathers, and when this does occur the tips are of a brownish tint and very faint. In all our males the under-tail coverts are tipped with brownish, rather well defined though much obscured in some individuals. There is a large variation in the amount of hoariness on the forehead. In the male Swift the tail is more emarginate. This is so marked that we have often distinguished between the sexes as the birds circled above us at a moderate height. For as one would make a quick turn in the air it would expand its tail, and should the bird happen to be a male, then the emargination showed plainly though it was not evident in the opposite sex. If conditions are favorable, with the aid of glasses this difference can often be noted when the birds are several hundred feet away. [See Pl. XXIV.]

In the female there seems to be a seasonal variation in the markings of the under parts posteriorly, but it must be borne in mind

that this statement is based only on the specimens taken during the period we have mentioned. Birds of this sex show the under parts not so sooty black as in the male. Those of early June have narrow tippings of white on the feathers of the abdomen and under-tail coverts, this being more marked in one secured late in the month. But in three taken July 6, the white tippings are much wider and still more so in another, taken July 14, in which they are so wide as to form nearly circular spots, producing a marked effect. Another collected August 2, is quite identical in all respects, and the entire under parts of these two birds have a lustre that is lacking in others taken earlier in the season. But one of August 15, is very lightly white-tipped, while yet another of September 2, is one of the strongest marked of all. And a juvenile female taken September 7, shows but a trace of the white tippings on the abdomen or under-tail coverts, the color of its under parts being almost as dark as that of some of the adult males.

In all the specimens that we have, the plumage seems to have been recently renewed; it is fresh and bright and shows no traces of a moult.

In the territory on the east side of the Sound, particularly that part quite contiguous to it lying north and south of Seattle, the route followed by the Black Swift in the spring migration is somewhat well defined. We have traced it for more than thirty miles and each year found the birds using it with regularity. At this time our main place of observation has always been the same, a spot on the west shore of Lake Washington and as it happens within the limits of the city. Here, adjacent to the lake the land is quite level for a wide space, but at the south rises somewhat abruptly forming a ridge, this being one of several lying between the lake and Sound and all having a general trend slightly diagonal to the shore line of the lake. The maximum height attained by any of these ridges is about three hundred and fifty feet, and nearly all terminate at a broad river valley lying not far southwest of the end of the lake, this valley extending many miles southward. As we know when to expect the arrival of the Swifts, it has been our practice to be at this place of observation on each of several successive days immediately prior to the time when their coming was anticipated, so it is fair to assume that when the Swifts did appear,

we were seeing some of the first to reach this particular part of the region.

The Swifts invariably come in sight above the rise of land at the south. They fly at various heights, are often quite scattered and the course followed is a general northerly one. But when the open and rather level space is reached, a change takes place in the direction of their flight. Not far north of here the lake expands into a bay of considerable size beyond the entrance of which the trend of the lake shore changes. It then runs nearly northeast for more than two miles; and this variation of direction in the shore line of the lake evidently has an effect on the course followed by the birds, for their flight deflects rather northeasterly and diagonally across the lake. Here the lake is several miles wide and as a rule the Swifts cross it to continue on their way more toward the north; although at times we have seen some birds following this course above the land not far from the eastern shore and also above the lake itself which still continues to extend four miles north. Beyond this limit we know very little regarding their route.

From what we have seen of this spring movement it appears to be soon completed, not lasting much more than ten days. This surmise is based on the change in route we have many times noticed the birds make not long after reaching this section, and though not conclusive it at least has sufficient merit to be taken into consideration.

In order that a more definite idea may be had of the flight of the Swifts at this time, we quote from our notes regarding it; these records being but a few of the many made at the time of the spring migration.

May 25, 1921. After four days of pleasant weather there is a change, this morning being somewhat misty with a light wind. We went to the lake early and on reaching it could see many Black Swifts flying about above it. While crossing the lake and when returning we found them quite well confined to an area some distance from the west side, and to number several hundred. None were much below a few hundred feet and many higher. The Swifts remained about this locality for nearly two hours seeming merely to shift back and forth above the lake, but had begun to move somewhat toward the northeast at the time we were obliged

to leave the spot. These are the first we have seen this spring although for the past three days we have looked for them. Today the visibility was so poor that it was quite difficult to form an estimate of their numbers.

May 26. We were at the lake this morning and crossed it soon after nine o'clock. Near its west side a few of the Swifts were seen, and when about a half mile from this shore the birds began to be quite numerous, flying about over the water at a height of two hundred feet and upwards, some very high and just discernible. None were seen much beyond the center of the lake or at all on the east side. On our return about an hour later they were again seen near the middle of the lake and became quite common as the west shore was neared. On rare occasions one would fly rather low, but the larger number were at a height of several hundred feet and upwards. Many were above the land on the west side of the lake, and it was noticeable that the main body of the birds, both over the water and land, was slowly progressing in a general north-easterly direction. At times there would be a break in this flight as it moved along, for the Swifts were circling widely and a few were feeding. We stopped for some time on the west shore and occasionally small companies would appear coming from the southwest or nearly so, to in turn slowly disappear from sight toward the northeast, circling on the way. Shortly after eleven o'clock we left the spot and at this time the movement was still in progress, the birds following the same general course toward the northeast.

No estimate could be formed of the number of Swifts seen today, but it was very large for at one time they seemed to cover an area from about the center of the lake to half a mile inland, and a distance north and south as far as we could see. Over this territory Swifts were always in sight, and as the course of our return across the lake was somewhat opposite to that followed by the birds it gave an excellent chance to see their numbers.

Today the weather was of all kinds. Some sunshine and light rains, but mostly lowery and cool. At times large spaces of blue sky would show among the clouds and here the Swifts appeared very high. The day closed with a hail-storm and a sudden drop in the temperature.

May 27. A cloudy morning with a light wind, but the day

proved fair. On reaching the lake early we could see Swifts scattered from above the land on the west side and over the lake to the east and northeast, as far as the eye could reach. Some were as low as just above the surface of the water, but most were at a height of more than a hundred feet and a few at the limit of the vision. Nearly all were gliding back and forth, but about eight o'clock a well defined and general movement among them began to take place, the birds moving in companies of varying numbers toward the northeast or nearly so. At times this movement was very plain. On one occasion fifty-six Swifts were first seen in the southwest, and circling, they passed overhead quite rapidly to disappear in the northeast, this taking place within fifteen minutes.

9.02—Another company numbering sixty, slowly circled past, nearly above us, these also coming from the same quarter to fade from sight in the northeast.

9.15—Swifts are now in sight in all directions, this having been the case more or less during the past hour. In view of subsequent observations, the height of the movement must have been about this time, as soon following there were times when no birds were visible.

9.45—We crossed the lake and on the way found the Swifts scattered about in all directions and at various heights; sometimes in small companies, the individuals of which kept well together, then broad spaces where only a few occurred. On our return to the west side the birds were still to be seen but more time elapsed between their passing and they were in lesser numbers.

11.05—Fifteen Swifts flew by coming from between the south and southwest to disappear in the northeast.

11.14—Nine straight from the southwest following the same course.

11.17—Six more appeared following nearly the same route.

11.26—Four Swifts passed by straight from the south and circling as they flew, vanished from sight north of northeast.

We remained in this vicinity until early afternoon, and during our stay the birds continued to pass in the manner described; in straggling numbers at irregular intervals and always coming from some point south to southwest. Sometimes one or two would be

seen circling far in advance of those comprising a company; and the way in which nearly all moved forward was by a continual overlapping of the circles described in their flight.

May 28—A beautiful day with rising temperature. We spent the entire day in the section about the lake but did not see a Swift. The large numbers seen the past two days would appear to have indicated the height of the movement, and if there were any of the birds within the territory covered today they were so high as to be invisible.

May 29-30. Conditions similar to those of the 28th, have prevailed on these days and no Swifts have been seen at all.

Autumnal migration. The first sign of the southward flight will be seen very early in September, and soon after it is in full swing. There is this difference, however, between the spring migration and that of fall; in the former, the Swifts are observed passing in considerable numbers on each day until the movement seems to have ended; whereas, in the latter, during its early stages there may occur a break of a day or so when none will be seen, but this soon ceases and then the birds are noted passing with regularity although on some days they are more numerous than on others.

Again, sometimes near the close of this migration there will be a "wave" of the Swifts, provided there occurs a storm or even threatening weather, or perhaps a drop in temperature. This seems to hold good, for the few seasons in which we have failed to see the wave were those that happened to be fair during the time the birds were migrating. The fall migration is the more prolonged and seems to exceed that of spring by several days.

In autumn, however, the route followed is changed to some extent in the territory lying immediately north of the city. The topography of the site of Seattle is rugged, and a better understanding of it is necessary in view of the remarks that follow. The city is located on the eastern side of the Sound, and eastward the land rises in a series of benches until a height of something like four hundred feet is attained midway between the Sound and Lake Washington, which latter forms the city's eastern boundary; this height of land representing what may be termed a ridge that runs irregularly in a general northerly and southerly direction. Although the northern end of this ridge is first deflected and then

terminated by a lake of some size, the land beyond again rises enclosing a smaller lake to the north of which is a somewhat elevated section bounded on its west side by the Sound. Here the height of land is nearly two hundred and fifty feet, the shore line of the Sound is bluffy, and a similar character of country continues indefinitely northward. An extension north of the high ridge within the city would unite it with the northern section; and running as it does, in a general southerly direction to the wide river valley previously mentioned, a route is defined that the Swifts appear to follow. This opinion is based on several years' observance of the autumnal flight, for not only have we watched them many times from a high spot on the ridge, but also north and south of the city as well; the line of flight we have traced being not less than thirty-five miles.

The following will convey a good idea of the manner of this migration, these notes having been made mainly from our place of observation on the high ridge within the city.

September 2. A morning with haze that soon cleared, the day proving fine with much sunshine and a north wind. Early there was a flight of the Swifts, appearing in large numbers above the elevated section north of the city and not far from the small lake. Some were foraging for insects, but many simply gliding about, and this was the case until nearly nine o'clock when a movement in a general southerly direction began taking place among them. This was a deliberate one as it was more than an hour before the last Swift had disappeared from the locality. We then went nearly twenty-five miles in the course of their line of flight, this bringing us to the northern end of the river valley south of the city. Here Swifts were again seen. They were very high and straggled when flying past, the manner of flight being a few rapid wing beats followed by long glides, and the course pursued due south above the river valley. In the afternoon we covered a wide territory at the north and northeast, but failed to note any of these birds until nearly six o'clock when a few were seen far northeast of the city, circling at a great height and moving toward the south, and these proved to be the last observed during the day.

September 3. A fine morning with a brisk southwest wind, but the afternoon was cloudy with signs of rain.

8.30—We began our watch for the Black Swifts.

9.55—Four Vaux's Swifts passed at a height of little more than a hundred feet, coming from the northwest and disappearing in the southwest.

10.30—At the north a Pigeon Hawk was seen not high in air, and while watching it with the glasses three Black Swifts came in sight at a height invisible to the eye. These drew nigh almost directly from the north, were not circling, and proceeded on their way by gliding almost against the wind with little wing movement, soon being lost in the south.

11.10—Nine Vaux's Swifts passed quite low from north to south, with them being five Barn Swallows following the same course.

11.12—Two Vaux's Swifts flew by quite high from north to south.

11.30—Three Black Swifts seen fully a thousand feet high. Two were soon lost to view in the south, and the remaining one, after passing, suddenly turned and joined some fifteen or more of the Vaux's Swifts at a much lower height, all soon disappearing in the northeast.

11.47—Three Black Swifts from nearly north at a height of many hundred feet. One soon faded in the south, the others at first flew east and then were lost to view in the southeast. All were circling, and one happening to come near another, the latter immediately darted at it, this followed by both diving and irregular flight actions before circling was resumed, and their disappearance.

12.05—Two of these Swifts seen in company at a considerable height. They came from the northwest, but separated after passing by and were soon lost in the south.

12.10—A single Black Swift came from the northwest flying past quite low directly overhead. After passing, it described a wide circle and then drifted west, where, on being joined by another, both soon disappeared in the southwest.

12.15—By the aid of the glasses we saw, far in the west, two Black Swifts coming from the north, these circled very much as they moved toward the south.

12.27—Three seen very high in the west passing rapidly toward the southeast, one flew exceedingly fast, distancing the others.

12.45, 12.50—During this interval one of these Swifts and a few Swallows flew by very high from north to south; these followed by

three Swifts not above three hundred feet, and in turn by nine at a great height.

12.53—A single Black Swift quite high far in the north. This bird was swinging in wide circles and passed flying toward the south.

1.30—Up to this time no more Black Swifts have been seen. The sky is now heavily overcast with signs of rain.

September 4. This morning there was a stiff wind from the south-southwest. We did not begin to watch for the Swifts until 10.30, and none were seen before 11.50. At this time several flew past. One was so high that it could just be seen by the aid of the glasses. It came straight from the north and with hardly a movement of the wings sailed against the wind. The visibility at this time was good as there was much blue sky with cumulous clouds. While watching an airplane flying at a height of several thousand feet we saw below it a few of the Black Swifts; the plane suddenly dropped a thousand feet or more, but the birds paid no attention to it probably because it was still far above them. No more Swifts were seen up to two o'clock when we ceased watching for them.

6.00—At this hour two of these birds were seen in the west circling very widely, and they finally disappeared in the northeast at the limit of our glasses.

6.20—Eleven Swifts in sight and circling. At this time there were many beautiful cumulous clouds banked high in the eastern sky, and the birds were finely defined against them.

6.28—Three seen coming from the north circling over a wide area. These finally faded from view in the south rising and falling in their flight, for at this time there is a brisk wind.

6.30-6.45—During this interval three of the Swifts have been seen. Two circled widely as they flew toward the south. The remaining one ranged over a wide area and then passed directly overhead at a low height. After flying by it circled a few times rising and falling on the wind, to then fade from view almost due south being sharply outlined against a brilliant towering cumulous cloud, which gave fine visibility. From what has been seen during the past hour, Swifts must have been flying east of where we are, for at times a glimpse was caught of some passing in that quarter, but we were unable to follow them to any extent.

Sunset—It is now too dim to see.

September 7. Last night the wind reached a velocity of twenty-eight miles, but this morning is fair. Early we were on the high ridge north of the city and here a great number of the Swifts were flying about mostly at a height of several hundred feet. They continued to stay in and about this locality for several hours and then a general drift toward the south took place among them, at this time all having ascended much higher. The remainder of the day we spent in going over a wide section of country, but did not again see any of the Swifts.

In view of later observations it would appear that this flight represented the height of the fall migration of the species, for although we continued to see Black Swifts on a few of the following days the number was always limited.

Over a long period of years the latest date on which we have seen this species is September 21. This was in 1923. We were near the Indian village of Lapush, situated at the mouth of the Quillayute River that flows into the Pacific Ocean. On the morning of that day, fifteen of the Swifts were seen at a good height, circling and gliding about above the ocean beach, and not far north of the village. Beneath them were very many of the Vaux's Swifts flying around in all directions, but keeping well together. And this body of birds was slowly proceeding on a nearly southerly course almost parallel to the shore of the ocean. Occasionally this forward movement ceased and the birds would circle within a limited area for a short time before once more moving on their way. Both species kept well in company, but the Black Swifts always maintained the greater height; the time all remaining in sight being a little more than half an hour.

Food. The stomachs of nineteen Black Swifts have been sent by us to the Bureau of Biological Survey, Washington, D. C., for an examination of the contents, and reports on them have been received for which we express our thanks. These prove of much interest as from them it would appear that nothing in the nature of aerial insect life is rejected by this bird. Some of the reports are appended; and to better show the diversity of insect food, these relate to birds variously taken during the period that the species is found in the region.

(1) Locality: Sallal Prairie, King Co., Washington. Date: June 22, 1923. Hour: 11 a. m. Sex ♀.

Condition of stomach: Full. Percentage of animal matter, 100.

Contents: Remains of more than 20 *Aphrophora permutata*, 50%; 12 or more *Hylemyia setiventris*, 1 *Tabanus* sp., and 1 *Hilara* sp., 33%; 25 or more *Psocidae*, 10%; 1 caddis fly, 1 May fly, 3%; a few plant lice and 1 *Anthocoris* sp., 1%; 1 *Agriotes* and 2 other small beetles, 1%; 3 hymenoptera (Lissonotinae, Ichneumoninae), 1%; 2 or more spiders, 1%.

(2) Locality: Sallal Prairie, King Co., Washington. Date: July 6, 1923. Hour: 7.30 p. m. Raining. Sex ♂.

Condition of stomach: Full. Percentage of animal matter, 100.

Contents: Remains of many crane-flies, including numerous *Tipula* sp., and *Helobia punctipennis*, 77%; other flies including Chironomidae, *Mycetophila* sp. (2), *Allodia* sp. (3), and *Scaptomyza terminalis* (2), 3%; 2 *Vespa vulgaris*, 1 Braconid, 3 Tryphoninae and 1 Campoplegine, 19%; 1 Staphylinid and 1 other beetle, tr.; a few caddis flies, 1%; and plant lice, tr.

(3) Locality: Sallal Prairie, King Co., Washington. Date: July 14, 1924. Hour: 7.25 p. m. Sex ♀.

Condition of stomach: Full. Percentage of animal matter, 100.

Contents: 1 *Gnathotrichus materarius*, 1 *Henoticus serratus*, 1 *Cercyon* sp., 1 *Helophorus* sp., 2 Staphylinidae, and 2 other beetles, tr.; 2 *Vespa consobrina*, 4 Ichneumoninae, 2 Amblytelinae and numerous ants, 25%; 1 *Limosina*, 2 *Mycetophila*, 3 *Linnophila*, 1 *Orthocladus*, 1 *Blepharocera*, 1 *Hylemyia*, 1 *Scatophaga furcata*, 2 *Sciara*, 1 Cecidomyid, 2 *Agromyza*, 1 *Hilara*, 1 *Chrysotus*, 2 Empididae, 1 *Drosophila*, 1 Ephyrnid, and a few Tipulidae, 6%; several moths, 10%; several May flies, 10%; one caddis fly and 1 Psocid, tr.; 3 *Agallia*, 3 *Cicadula*, 1 *Oncopsis*, 1 *Aphrophora*, and a few other leaf hoppers, 1%; 7 *Adelphocoris superbus*, 8%; and remains of hundreds of plant lice, 40%.

(4) Locality: Sallal Prairie, King Co., Washington. Date: August 2, 1924. Hour: 7.15 p. m. Sex ♀.

Condition of stomach: Full. Percentage of animal matter, 100.

Contents: 1 *Aphrophora permutata*, 8 *Oncopsis* sp., 1 *Agallia* (s.l.), 1 *Phlepsius*, 1 other Jassid, 1 *Lygus* and a few plant lice, 3%; more than 20 Ephemeraida, 1 Hemerobiid and 1 Trichopteron, 30%; 4 *Cercyon* prob. *fulvipennis*, 1 *Microbregna emarginatum granicollis*, 1 *Serropalpus barbatus*, 1 *Apodius fimetarius*, 2 *Pactopus horni*, 1 *Simplocaria columbica*, 1 *Pseudohylesinus*, 6 *Gnathotrichus materarius*, 1 Elaterid, 2 *Henoticus serratus*, 4 *Epuraea*, 1 *Anthobium* (?), 1 Scarabaeid, and 2 other beetles, 12%; 1 *Paniscus*, 1 Eupelmidae, 2 Alysiidae, 5 Mesochorinae, 6 Ichneumoninae, 1 Vipioninae, 1 Vespidae, 1 Serphidae, 2 Paniscinae, and 6 Ichneumonoidea,

16%; 1 *Sapromyza luteola*, 1 *Mycetophila* sp., 1 *Platyura* sp., 1 *Erioptera*, 2 *Rhamphomyia*, 1 *Mycetaulus*, 1 *Hylemyia*, 3 *Gonomyia*, 1 *Helina rufitibia*, 8 or more *Eriopterini*, 1 *Culex*, and 1 *Heteromyia*, 39%.

(5) Locality: Bellingham, Washington. Date: September 2, 1921. Hour: About 6 p.m. Sex ♂.

Condition of stomach: Full. Percentage of animal food, 100.

Contents: 9 termites (*Termitopsis augusticollis*), 70%; 2 caddis flies (Trichoptera), trace; 1 tree-hopper (Membracidae), numerous leaf-hoppers (Jassidae), 2 predacious bugs (*Nabis* sp.), 1 plant-bug (*Lygus* sp.), 10%; 3 dung beetles (*Aphodius fimetarius*, *A. eleutetus*), 1 ground beetle (*Amara* sp.), 1 fungus beetle (Cryptophagidae), 1 rove-beetle (Satphynidae) and 1 other beetle, 6%; 1 soldier fly (*Mircochrysa* sp.), 3 fungus gnats (*Mycetophila* sp., *Platyura* sp.), 2 hump-backed flies (*Rhamphomyia* sp., *Hilara* sp.), 1 crane-fly (*Tipulidae*), 1 flower-fly (*Platychirus* sp.), 1 robber fly (Asilidae), 1 long-footed fly (Dolichopodidae) and 2 other flies (*Pegomyia* sp., *Hylemyia* sp.), 8%; 1 yellow jacket (*Vespula* sp.), 1 ant (Formicidae), and 18 parasitic wasps (Tryphoninae, Porizoninae, Alysiidae, *Aphidius* sp., *Campoplex* sp., Diplazoninae, *Amblyteles* sp., Phygadevoninae, *Mesochorus* sp., *Glypta* sp.), 6%.

(6) Locality: Seattle, Washington. Date: September 7, 1922. Hour: 7 to 7.30 a. m. Sex ♂.

Condition of stomach: Full. Condition of gullet: Contained a few flies. Percentage of animal matter: 100; of gravel, etc., tr.

Contents: Remains of many *Chironomus* spp., 1 *Helobia punctipennis*, 1 *Dichrochira glabricula*, 3 Psychodidae, 1 *Mycetophila* sp., 2 *Aphiochaeta* sp., 1 *Hilara* sp. and possibly other diptera, 60%; remains of 10 *Meteorus* sp., 2 Vipionidae, 1 Pteromalid, 1 Hemiteline, and three or more other Hymenoptera, 36%; remains of numerous plant-lice, a few small leaf-hoppers and traces of a heteropteron, 4%; 1 Byrrhid (*Tylicus subcanus*) and bit of water-beetle, tr.

217 Fourteenth Avenue North,
Seattle, Washington.

BREEDING OF THE HERRING GULL (LARUS ARGENTATUS) IN MASSACHUSETTS.

BY GEORGE H. MACKAY.

SHORTLY after arriving at Nantucket for the summer of 1925 I met several of my acquaintances who frequent Muskeget waters, and who informed me that the "big Winter Gulls" were breeding again this year on the South Beach, a narrow sand bar over a mile long and about thirty yards wide situated on the back side of Muskeget Island about three quarters of a mile to one mile distant, where it serves as a barrier to protect that island from the fury of the ocean on that side. Not only that the Herring Gulls were breeding on this beach, but had been doing so for about three years.

As this was a most interesting piece of information I deputed my son Captain R. L. Mackay, U. S. A., to go down there and make a thorough investigation. He did this on July 1, and was on the South Beach, July 2, returning to Nantucket July 4, 1925, and the results of his visit will, I hope, interest the readers of 'The Auk,' as much as they did me.

As far as I am aware *Larus argentatus* has never been recorded as breeding in Massachusetts waters with but one exception, when I recorded the finding of a nest with two downy young on the middle Wepecket island, Buzzards Bay by Mr. Vinal Edwards of Woods Hole, Massachusetts. ('Auk,' Vol. IX, No. 3, July, 1891, page 226.)

I would now place before my readers the results of my son's trip to Muskeget island and the South Beach, Massachusetts.

This beach, as before stated, is over one mile long, and about thirty yards wide, higher at the western end, where there is a little beach grass on the north side, than at the eastern end, where at times the ocean breaks over the beach and washes away any eggs, and any thing else that happens to be there, so that on one occasion the Gulls moved their breeding site over to the south end of Muskeget island proper, but only for one season, so I am informed—returning afterwards to breed again on the South Beach, which is only oc-

asionally visited by fishermen, the isolation of the situation undoubtedly appealing to the birds, coupled with a feeling of greater security.

Here my son found a considerable number of chicks, the prevailing color of which was gray, on his approach the chicks would make for the water, several of them disgorging pieces of sand eels about two inches long, and, notwithstanding that they were repeatedly washed back on the beach by the waves, they continued to try until they reached the smoother water back of the breakers, one good sized chick had its wing broken while trying to get through the surf.

My son and his companions Captain Fred Howes, and Mr. Preston Swain, both of the Life Saving Station on Muskeget island, estimated there were about three hundred chicks already hatched out, and about two hundred parent birds one-third of which were white, and two-thirds gray.

Most of the chicks and eggs were at the southwest end of the Beach, on the north side where there is a little beach grass, there were a few scattered nests with eggs at the middle of the beach, one to three eggs in a nest.

The nests were composed of a little seaweed scantily put together, which could scarcely be called a nest, many of the chicks were huddled in the lee of anything that afforded them protection from the elements, six being counted in one group under the lee of a piece of wreckage which was partially in the water. The estimated number of nests with unhatched eggs was about thirty.

The chicks were of various size, some just hatched out and some just able to lift themselves off the beach with their wings.

My son also walked all over Muskeget island proper to ascertain the status of the Terns, domiciled there this season. He reports that the eggs were pretty much hatched out and the birds in the air beyond estimation.

He also informed me that according to local estimates there might be some three thousand Laughing Gulls (*Larus atricilla*) domiciled on the island.

Nantucket, Mass.

BIRDS OF THE BROWNSVILLE REGION,
SOUTHERN TEXAS.

BY LUDLOW GRISCOM AND MAUNSELL S. CROSBY.

(Continued from p. 440.)

1. *Colymbus dominicus brachypterus*. MEXICAN GREBE.—A fairly common summer resident, rare or casual in winter. Spring arrival date March 19, 1891. The latest fall dates are Nov. 24, 1911, and Dec. 26, 1911. We have seen specimens taken Jan. 14 (or 24?), 1881 at Lomita, and Feb. 1, 1880 at Lomita. A nesting date is May 16, 1877 (Merrill). It is found throughout the area, even in small ponds near Brownsville, but we have no record of its occurring on salt water.

2. *Podilymbus podiceps*. PIED-BILLED GREBE.—Merrill states that it occurs in winter, and we found it in all the fresh and brackish water visited. It was particularly common, however, and characteristic of the prairie ponds north of Harlingen. Bent discovered this species breeding fairly commonly with the Mexican Grebe about Brownsville, and found a nest on May 23, 1923. It was also found in summer by de Laubenfels.

3. *Larus argentatus*. HERRING GULL. An uncommon winter visitant to the Laguna Madre (Merrill, Griscom and Crosby). Merrill shot a specimen near Fort Brown, March 3, 1877. We have no satisfactory arrival or departure dates.

4. *Larus delawarensis*. RING-BILLED GULL.—A fairly common winter visitant on the Laguna Madre (Merrill, Griscom and Crosby). Smith collected several specimens, and there are two in the Sennett Collection, but we have no good migration dates.

5. *Larus atricilla*. LAUGHING GULL.—Formerly a very common summer resident, wintering in numbers, and breeding on the islands in the Laguna Madre and the salt prairies. Now greatly reduced in numbers, but still nesting commonly; comparatively few birds present in winter. There are no records away from salt water.

6. *Larus franklini*. FRANKLIN'S GULL.—This Gull has been found to be a common transient near Corpus Christi, but there are comparatively few records for the Brownsville region. We have seen 4 specimens taken Oct. 21, 1908, Nov. 10, 1909 and April 23, 1912.

7. *Gelochelidon nilotica*. GULL-BILLED TERN.—Still a fairly common permanent resident; a large breeding colony at Bahia Grande. In reduced numbers in winter, but always present. It is the only Tern really common away from the larger bodies of salt water, and is constantly hawking over the coastal prairies.

8. *Sterna caspia imperator*. COUES' CASPIAN TERN.—A common summer resident, in reduced numbers in winter. A breeding colony at Bahia Grande.

9. *Sterna maxima*. ROYAL TERN.—Formerly an abundant summer resident, still nesting at Bahia Grande. Perhaps a winter resident, in reduced numbers, but not reported later than Dec. 20, 1921 (Pearson).

10. *Sterna sandvicensis acuflavida*. CABOT'S TERN.—Formerly a common summer resident, still breeding at Bahia Grande, but one of the least common species there (Pemberton). We have no record of its occurrence in winter, but it should be expected at least occasionally. The earliest spring date we have is March 28, 1878 (Sennett), at Corpus Christi, which gives some indication of when it may be expected to arrive.

11. *Sterna forsteri*. FORSTER'S TERN.—Still a common summer resident, a breeding colony known at Bahia Grande. Of regular occurrence in winter in reduced numbers. As one wanders out over the coast prairies at this season towards the Laguna Madre, the Gull-billed Tern is encountered at the first suggestions of moisture. The next species is Forster's, as soon as lagoons of any size appear. We have examined several specimens taken in winter.

12. *Sterna hirundo*. COMMON TERN.—Pemberton reports this species as the second commonest Tern at Green Island. No specimens were taken, and due to the ease with which this species can be confused with Forster's Tern in life, this record, which would constitute a notable southward extension of the bird's range, requires confirmation in our opinion. We include it in the list, however, as there is an adult female in the Salvin and Godman Collection taken by Armstrong at Brownsville in May.

13. *Sterna antillarum*. LEAST TERN.—Formerly an abundant summer resident, breeding not only on the coast but also on the sand-bars of the Rio Grande. A breeding colony still exists at Bahia Grande. Merrill records it as wintering, but there are no recent records at that season. We have seen no specimen taken earlier in the year than April 13 (1894).

14. *Chlidonias nigra surinamensis*. BLACK TERN.—Probably a regular transient, but there are very few records. Armstrong obtained specimens near Brownsville in May for the Salvin and Godman Collection. Observed in spring from May 9 (1921) (Pemberton) to May 30 (1923) (Bent). Sennett obtained 9 specimens Aug. 13 and 15, 1880, and Smith collected several on Aug. 21, 1911. It should be found much later in the fall. Reported by de Laubenfels as "regular but not very numerous" in the bayous about Brownsville in mid-summer, 1924.

15. *Rynchops nigra*. BLACK SKIMMER.—A fairly common summer resident; a breeding colony now known at Bahia Grande (Pemberton). We have no record of its occurrence in winter, though it should certainly be found in limited numbers at that season. Our earliest date is March 30, (1894) and the latest is Nov. 24 (1921) (Pearson).

16. *Anhinga anhinga*. WATER-TURKEY.—Presumably a permanent resident, but we have no records between Dec. 5 (1909) and March 18, (1880). It is reported as rare near the coast, occurring chiefly on the lagoons up the Rio Grande River, where the timber is of larger size.

17. *Phalacrocorax vigua mexicanus*. MEXICAN CORMORANT.—An abundant resident, found throughout the year on all the waters of the region, but breeding only inland in wooded swamps. The tameness of this bird was a perpetual source of surprise to us, and we could have "pot-shot" it on numerous occasions.

18. *Pelecanus erythrorhynchos*. WHITE PELICAN.—An abundant transient and winter resident on all the larger lagoons of the coast. Merrill, nearly 50 years ago, recorded it as present throughout the year, and was convinced that it bred, but found no nests. Pearson found it nesting, however, on Little Bird Island, just north of our region, in May, 1920; so that it may yet be found breeding further south. As a summer resident, it would seem to be irregular, as Cahn found no traces of it on Little Bird Island in 1921. Pearson saw 30 near Green Island on June 3, 1920, and there is a specimen in the Sennett Collection taken Aug. 19, 1880, at Lomita. Whether the latter is a genuine fall arrival date or not remains to be definitely determined.

19. *Pelecanus occidentalis*. BROWN PELICAN.—Common throughout the year on the Laguna Madre and the coast, but confined to salt-water, and does not occur on the smaller brackish lagoons, where the White Pelican is perfectly at home. Formerly it bred abundantly in our region, but at the present time no definite nesting colony is known.

20. *Fregata aquila*. MAN-O'-WAR-BIRD.—This bird is apparently an occasional visitant to the coast during the summer months. The only definite record for our area, however, is a specimen taken at Lomita, Aug. 17, 1880, where, of course, its occurrence is purely casual.

21. *Lophodytes cucullatus*. HOODED MEGANSER.—This species is included solely on the authority of Merrill, who states that a few were seen during winter. There is no reason to doubt this record, as it has occurred as far south as southern Mexico.

22. *Anas platyrhynchos*. MALLARD.—Recorded as not uncommon during the winter months by Merrill. We found it generally distributed in the fresh water sloughs in the prairies on the Norias Ranch and in the fresh water ponds near Brownsville, but did not see it at any time on the coast prairies. It was, however, distinctly one of the less common Ducks, and we never saw more than 25 individuals on any one day. We have no arrival or departure dates.

23. *Anas fulvigula maculosa*. MOTTLED DUCK.—Reported by Merrill as not common, a few remaining to breed in the marshes near the coast. Sennett took a specimen at Point Isabel on May 19, 1876, and Smith shot it near Brownsville on March 29, 1912. We saw this species definitely only on the prairies just north of our region, where it was very scarce.

24. *Chauliasmus streperus*. GADWALL.—Merrill states that the Gadwall was the commonest winter Duck about Brownsville, a few remaining all summer. We found it generally distributed in fresh water, but easily the scarcest of the usual *Anatinae*, and never recorded more than

half a dozen individuals in any one day. The Dwight Collection contains 12 specimens collected by Smith between the dates of Sept. 12, 1911 and April 22, 1912.

25. *Mareca americana*. BALDPATE.—Recorded as common by Merrill, especially in spring and fall. We found the Baldpate only fairly common on the coast prairies and in a large flooded meadow in the interior. In the sloughs on the open prairies of the Norias Ranch only a single bird was seen. Sennett took a specimen April 18, 1877 at Lomita, and Smith shot one Nov. 23, 1911. It undoubtedly arrives at least a month earlier in the fall.

26. *Nettion carolinense*. GREEN-WINGED TEAL.—Reported by Merrill as common, especially on migration. Near Brownsville we found it very scarce and entirely absent from the coast prairies. On the Norias Ranch, however, this Teal was abundant, and every slough in the prairies had its quota. We have no arrival or departure dates.

27. *Querquedula discors*. BLUE-WINGED TEAL.—Merrill regarded this species as a common transient arriving early in September, a few remaining during the winter, the majority returning about mid-March. We saw a very few birds in the prairie region in January, 1923, but a flooded meadow in the scrub about 15 miles northwest of Brownsville seemed exactly suited to their requirements. Here they were literally swarming on Jan. 6, and flocks containing many hundred birds were darting over the water at the sound of a gun, and pitching down through the bushes, where they were practically invisible. Observed by Bent near Brownsville May 24, 1923, and Smith shot one on Sept. 25, 1912.

28. *Querquedula cyanoptera*. CINNAMON TEAL.—Reported by Merrill as not rare during migration, more seen in spring than in autumn. Bent has recently mentioned its wintering as far east as Brownsville. Pearson shot one out of a flock of 14 on the Norias Ranch Nov. 30, 1924, and we saw a pair there in a slough on Jan. 9, 1923. There are four specimens in the British Museum taken in January, March and April near Brownsville by Armstrong.

29. *Spatula clypeata*. SHOVELLER.—An abundant winter resident, but rare on the coastal prairies. It has been shot as late as April 26, 1876, and Merrill states that he saw several pairs during the breeding season. We have seen no specimen shot earlier than the end of November. It should arrive the latter part of September.

30. *Dafila acuta*. PINTAIL.—By all odds the most abundant Duck of the region, occurring in almost unbelievable numbers in every type of water. It is at least ten times as common as the Shoveller, and more than one hundred times as common as any other species. Smith collected specimens between Nov. 17, 1911 and April 23, 1912. It arrives much earlier in the fall.

31. *Marila americana*. REDHEAD.—Recorded as not uncommon by Merrill. Pearson reports a large flock in the Laguna Madre near Point Isabel Nov. 23 and 24, 1921. We saw a drake on Jan. 3, 1923 and a flock of 15 the next day near Brownsville.

32. **Marila valisineria.** CANVASBACK.—Recorded by Merrill as "rarer than the Redhead, but few shot." Specimens in the Sennett Collection were shot near Brownsville March 12, 1889 and April 7, 1890. Pearson reports a pair on the Fort Brown reservation Dec. 21, 1921. We saw a drake at Brownsville on Jan. 8, 1923, and another with Scaup Ducks on the Norias Ranch the next day.

33. **Marila marila.** SCAUP.—Recorded by Merrill as rather rare. We have no other data for the region.

34. **Marila affinis.** LESSER SCAUP.—Decidedly more common than the last (Merrill). There are 13 specimens in the Dwight Collection taken by Smith from Nov. 20, 1911 to April 18, 1912. We found Scaups generally distributed in the area covered, but they were nowhere common. The species was never positively determined, however. De Laubenfels reports a single bird sometime after June 25, 1924.

35. **Marila collaris.** RING-NECKED DUCK.—Known only from the record of Merrill, who killed a few specimens. We found a flock of 6 on the Norias Ranch with Scaups and a Canvasback on Jan. 9, 1923.

36. **Charitonetta albeola.** BUFFLEHEAD.—Reported as rather plentiful by Merrill. Smith took a specimen on Feb. 15, 1912 near Brownsville. There are two adult males in the British Museum taken in March and August near Brownsville by Armstrong. The latter date, if correct, is very remarkable. There are no other records.

37. **Harelda hyemalis.** OLD-SQUAW.—This species was added to the avifauna of the region by Pearson, who found a flock of about a dozen living on a pond near the El Sauz ranch-house east of Norias during December, 1921. Four specimens were shot.

38. **Erismatura jamaicensis.** RUDDY DUCK.—Recorded by Merrill as abundant. Smith took 6 specimens between Nov. 22, 1911 and April 18, 1922. Pearson found this species in several places and shot several. We shot one at Noriagas, and saw a flock of 10 on the Norias Ranch.

39. **Nomonyx dominicus.** MASKED DUCK.—A male, No. 79555, is in the Sennett Collection without a Sennett number. It was taken near Brownsville, July 18, 1891.

40. **Chen hyperboreus hyperboreus.** SNOW GOOSE.—An abundant winter resident, recorded by all observers, characteristic of the coastal prairies. We have seen no specimens. Not reported later than March 29, 1877.

41. **Chen caerulescens.** BLUE GOOSE.—Mr. T. Gilbert Pearson was the first to extend the winter range of this Goose south of Corpus Christi, as he found it on the King Ranch. We found ten associating with a flock of Snow Geese on the Norias Ranch Jan. 9, 1923, and five in a flock of 75 Snow Geese near Point Isabel on Jan. 10. Mr. R. D. Camp, the local game warden, assures us that this species is by no means rare, always associating with its relative.

42. **Anser albifrons gambeli.** WHITE-FRONTED GOOSE.—A common winter resident. According to Merrill it is the first Goose to return in

autumn, usually about the first week in October, and he reported it as late as April 18. Smith shot a specimen on the exceedingly late date of May 24, 1912. We found it very common on the prairies and surprisingly tame.

43. **Branta canadensis canadensis.** CANADA GOOSE.—The exact status of the two subspecies of Canada Geese still remains to be determined. Canada Geese of some form are the most abundant members of the group on the King Ranch north of our region. South of the sandhills, however, they decrease rapidly in numbers, and are less common than the Snow and White-fronted Geese. Merrill reports the typical race as not rare, and presumably secured specimens. This is our only definite information.

44. **Branta canadensis hutchinsi.** HUTCHINS' GOOSE.—More abundant than *canadensis*, but less so than *A. gambeli* (Merrill). Smith collected a specimen of this race on Oct. 24, 1912 at Brownsville. We could not, of course, be sure of the subspecies of the Canada Geese we saw, and regard sight records of these two races as unsatisfactory.

45. **Dendrocygna autumnalis.** BLACK-BELLIED TREE DUCK.—A common summer resident, not arriving in numbers until late April, the majority leaving for the south in September and October, a few individuals lingering into November. Extreme dates are April 12 (1902) and Nov. 8, (1880).

46. **Dendrocygna bicolor.** FULVOUS TREE DUCK.—Recorded by Merrill as about as common as the Black-bellied Tree Duck. It still occurs in the great marshes near Point Isabel according to Mr. R. D. Camp. There are two specimens in the Dwight Collection taken Dec. 6, 1893, and Jan. 15, 1890. There are March, April, November and December specimens in the British Museum taken by Armstrong near Brownsville.

47. **Cygnus columbianus.** WHISTLING SWAN.—A specimen was caught in a lagoon near Brownsville in January, 1878, according to Merrill, who states further "either this species or the Trumpeter is said to be not uncommon near the coast during winter." Dresser (1866) states that Swans were not uncommon near Brownsville during the winter, but does not record the species definitely. There are no other reports.

48. **Ajaia ajaja.** ROSEATE SPOONBILL.—A regular and often common summer visitor, its breeding suspected by Merrill, and a colony likely to be discovered at almost any time. Chiefly confined to the coastal salt marshes, but in Sennett's time at least occurred up the Rio Grande River as far as Lomita. Extreme dates are March 23 (1881) to Sept. 27 (1911).

49. **Guara alba.** WHITE IBIS.—Apparently local and uncommon. A permanent resident. Merrill recorded a few at all seasons, and Sennett found a few in a White-faced Glossy Ibis rookery, but obtained no evidence of breeding. We have seen no specimens taken between May 16 and November 1, but there are March and April specimens in the British Museum.

50. **Plegadis guarauna.** WHITE-FACED GLOSSY IBIS.—A permanent

resident, nesting in large colonies, one or two of which still exist. Less common in winter, according to previous authors, but we found flocks in several places, chiefly in the ponds and resacas away from the coast. Both the Sennett and Dwight collections contain specimens taken at various times of the year.

51. ***Mycteria americana*.** WOOD IBIS.—Status still somewhat uncertain. Apparently an irregular visitor in flocks at any time of the year. No definite evidence of nesting. Merrill saw only one pair on April 10, 1876, near Fort Brown. Sennett records a large flock in mid-May, 1878, at Lomita during a rise in the river, but states that no more were seen later. The Dwight Collection contains an August, a September and a November specimen, taken in different years. We saw a flock of 40 sailing over Fort Brown on Jan. 8, 1923.

52. ***Botaurus lentiginosus*.** BITTERN.—Apparently a rare transient or winter resident. Merrill states that it occurred in moderate numbers during migration. Sennett records a specimen taken at Lomita in May, which is not in his collection, and there is a specimen in the Dwight Collection taken at Brownsville March 22, 1897. A specimen in the British Museum taken by Armstrong is listed as a July bird, but this is probably an error.

53. ***Ixobrychus exilis*.** LEAST BITTERN.—Merrill and Sennett found a few pairs in a large heronry near Brownsville on May 16, 1877. They found no nests, but suspected that it bred. Smith collected one on April 11, 1912. There are eight specimens in the British Museum taken by Armstrong near Brownsville in January, April and May. Bent found it breeding commonly in May, 1923.

54. ***Ardea herodias herodias*.** GREAT BLUE HERON.—Exact status unknown, but perhaps a rare or casual winter visitor. A young bird in the Dwight Collection taken by Smith on March 21, 1912, must be referred to this subspecies, on the basis of its measurements.

55. ***Ardea herodias wardi*.** WARD'S HERON.—Presumably an abundant permanent resident, as Dr. H. C. Oberholser in his revision of the species cites Brownsville as part of its breeding range. We have seen no specimens.

56. ***Ardea herodias treganzai*.** TREGANZA'S HERON.—An accidental visitant from the West. Smith collected a specimen on Feb. 27, 1911, which Dr. Oberholser has identified as belonging to this race, recently admitted to the A. O. U. 'Check-List' (Oberholser, 'A Revision of the Forms of the Great Blue Heron,' Proc. U. S. Nat. Mus., XLIII, p. 546.)

57. ***Casmerodius egretta*.** EGRET.—Formerly a common permanent resident, breeding abundantly. Now rare throughout the area. We know of no recent report of more than five individuals seen at any one time.

58. ***Egretta candidissima candidissima*.** SNOWY EGRET.—Formerly an abundant summer resident, a few wintering. Now rare and local, but decidedly more numerous than the big Egret, and still occurring in winter

in small numbers, as we saw 3 on Jan. 4, 1923, and Pearson has recently obtained breeding evidence.

59. **Dichromana** *rufescens*. **REDDISH EGRET**.—Still an abundant summer resident near salt water, a colony of "5,000-10,000 birds" on Green Island in the Laguna Madre (Pearson). A very few individuals remain in winter.

60. **Hydranassa** *tricolor ruficollis*. **LOUISIANA HERON**.—Still a common summer resident, known definitely to nest on Green Island (Pemberton). Merrill does not record it in winter, but we found small flocks in several different places in January, 1923.

61. **Florida** *caerulea*. **LITTLE BLUE HERON**.—Not particularly common permanent resident, and absent or rare on the coastal salt marshes. It is found principally in small flocks up the Rio Grande, in the resacas and interior swamps.

62. **Butorides virescens virescens**. **GREEN HERON**.—A common summer resident away from the coast. Merrill reports it as rare in winter, and we saw one on Jan. 5, 1923, in a resaca near Brownsville. A specimen collected by Smith on April 8, 1912, is the nearest approximation we have to a spring arrival date.

63. **Nycticorax nycticorax naevius**. **BLACK-CROWNED NIGHT HERON**.—A common summer resident, nesting in large rookeries, several of which have been recently located. Of general distribution in winter, but in reduced numbers. Sennett found fully grown young at Lomita on April 23, 1878.

64. **Nyctanassa violacea**. **YELLOW-CROWNED NIGHT HERON**.—Apparently uncommon permanent resident, definite breeding evidence lacking. Merrill calls it rather uncommon. Sennett did not encounter it, but his collection contains July and August specimens from Lomita. The Dwight Collection contains a specimen shot March 10, 1900. We saw five on Jan. 4, 1923, with the other species on the coastal prairies.

65. **Grus americana**. **WHOOPING CRANE**.—Recorded by Dresser, Merrill and Sennett, at which period it was a not rare winter resident, occurring chiefly on the coastal prairies and always in pairs. The Dwight collection contains specimens taken Dec. 2, 1892, in Hidalgo County, and Feb. 18, 1894, near Brownsville. The last record for our area is one of two birds seen May 6, 1900, on the Rio Coloral by Mr. and Mrs. Vernon Bailey. However Pearson found several on the Laureles Ranch some miles north of our area in December, 1921. We found four birds in the same place on Jan. 12, 1923, and Mr. Richard M. Kleberg, the owner, told us there was another flock of five about 20 miles further south.

66. **Grus canadensis**. **LITTLE BROWN CRANE**.—A winter visitant of uncertain status. There are four specimens in the Dwight Collection. A male was shot near Brownsville Dec. 18, 1890, by James B. Neal, and three specimens collected in "Cameron County" by Armstrong on Nov. 23 and 26, 1912, were probably from our region.

67. **Grus mexicana**. **SANDHILL CRANE**.—A regular winter visitor

to the coastal prairies, common near Brownsville and increasing northward on parts of the King Ranch where it occurs in large flocks. We have seen no specimens. Dresser records it as early as September in 1863, but we have no departure dates.

68. **Aramus vociferus.** LIMPKIN.—An accidental visitant from the South. One specimen in the Sennett Collection taken May 23, 1889 near Brownsville by Fields and Armstrong. This bird is in any event a different subspecies from the Florida form, but recent revisors radically disagree as to the number and ranges of various proposed forms.

69. **Rallus elegans.** KING RAIL.—Apparently a winter visitant, but whether rare or regular remains to be determined, and not hitherto recorded from further south than Corpus Christi, so far as we know. The Dwight Collection contains three specimens taken by Smith at Brownsville Sept. 27 and Dec. 28, 1911, and Oct. 1, 1912. One in the British Museum was taken by Armstrong on April 2. We saw one near Point Isabel on Jan. 10, 1923, in a fresh water swamp. It was very tame and permitted a near approach.

70. **Porzana carolina.** SORA.—A regular winter visitant, more numerous on migration. Merrill was quite positive that a few nested near Brownsville, but this has never been substantiated, and is highly improbable according to its present known breeding range. Numerous specimens in the Sennett and Dwight Collections show that it is present from Aug. 31 (1912) to May 20 (1889).

71. **Ionornis martinicus.**—PURPLE GALLINULE.—First recorded by Merrill, who took young birds scarcely able to fly in September. The Dwight Collection contains two specimens, April 13, 1902, and Aug. 17, 1912. This slender evidence would seem to indicate that this species is a rare and local summer resident.

72. **Gallinula galeata.** FLORIDA GALLINULE.—Found nesting by Merrill and Sennett on May 16, 1877, in the large herony near Brownsville. Apparently a resident, as Smith obtained it in winter, and we recorded a total of four individuals in January, 1923. These were invariably in clumps of cat-tail in small ponds and resacas. The British Museum Catalogue lists skins taken by Armstrong in March, May, June and September. Bent found two nests near Brownsville May 23, 1923.

73. **Fulica americana.** COOT.—An abundant winter visitant, found wherever there is water, and a summer resident in small numbers. Found nesting in the Brownsville herony May 16, 1877, by Sennett and Merrill. Every pond and prairie slough in the region was full of Coot during our visit in January, 1923, and it was nothing unusual to see several hundred individuals in the course of a day's tramp.

74. **Steganopus tricolor.** WILSON'S PHALAROPE.—Apparently an occasional transient as yet recorded in spring only. We have seen four specimens taken locally, and Mrs. Bailey records it in full breeding plumage on May 8, 1900. Extreme dates, March 25 (1894) to May 25 (1912) all from Brownsville.

75. **Recurvirostra americana.** AVOCET.—Reported by Merrill as common during winter, a few pairs remaining to breed. The species is not given as breeding so far south in the A. O. U. 'Check-List,' but Merrill's report is apparently substantiated by Pemberton, who found it breeding at Bahia Grande. Otherwise it is known chiefly as a transient in March. Specimens before us were taken between Feb. 23 (1881), and March 28 (1912). Sennett saw flocks of three or four on March 29, 1877, below Brownsville, but found none on his return on May 20. The Avocet is certainly no longer common in winter in the region.

76. **Himantopus mexicanus.** BLACK-NECKED STILT.—A common permanent resident, in reduced numbers in winter, but generally distributed. We have seen numerous specimens taken locally. A nesting date is May 16, 1877 (Sennett and Merrill).

77. **Gallinago delicata.** WILSON'S SNIPE.—A common winter resident, even more abundant during migration according to Merrill. In 1876, he shot the first arrival on Sept. 18, which was said to be a month earlier than normal. The next year the main flight did not occur until Nov. 28. The latest spring date is March 17, 1912, but it should occur much later.

78. **Limnodromus griseus scolopaceus.** LONG-BILLED DOWITCHER.—Common transient, regularly wintering, on the mud flats of the coast and the Laguna Madre. All of the numerous specimens examined belong clearly to this subspecies. The earliest fall date is July 18, 1913. There is a specimen in the British Museum taken April 25 by Armstrong.

79. **Micropalama himantopus.** STILT SANDPIPER.—Recorded by Merrill, Oct. 13, 1877. Collected by Smith on April 22, 1912, and from July 8 to Aug. 9, 1913, by Armstrong, who obtained 18 specimens in this period. It will probably be found to be a regular transient. There are four specimens in the British Museum taken in April and May by Armstrong.

80. **Pisobia maculata.** PECTORAL SANDPIPER.—A common transient both spring and fall; extreme dates based on specimens are March 16 (1890), to April 22 (1912), and late July (Merrill) to Oct. 24 (1912). There are May specimens in the British Museum taken by Armstrong.

81. **Pisobia fuscicollis.** WHITE-RUMPED SANDPIPER.—Probably a regular transient, but data are lacking. Merrill reports it as common in winter, but we cannot accept this statement, as the species is now known to winter only in southern South America. Frazer collected a specimen at Lomita on May 22, 1880. Armstrong shot two specimens in May, now in the British Museum.

82. **Pisobia bairdi.** BAIRD'S SANDPIPER.—Probably a regular transient, but dates are lacking. Two females collected by Merrill on March 30, 1876, on a sandbar in the Rio Grande.

83. **Pisobia minutilla.** LEAST SANDPIPER.—A common winter resident, but we have no arrival date better than Sept. 1, 1912, and no spring departure date later than May 24, 1923 (Bent). We found this

species common on the edges of a flooded pasture in the scrub country north of Brownsville. "Peep" of various kinds are abundant on the coast.

84. *Pelidna alpina sakhalina*. RED-BACKED SANDPIPER.—Status imperfectly known, but here at the extreme southern limit of its winter range. Merrill reports it as rather common about the salt lagoons near Point Isabel on May 16, 1877, but Sennett was with him on this day, and does not mention the species in his paper. Smith, however, obtained specimens between Nov. 1 and 15, 1908. There are two specimens in the British Museum taken on May 14 by Armstrong.

85. *Ereunetes pusillus*. SEMIPALMATED SANDPIPER.—A common winter visitant according to Merrill, who does not record *E. mauri*, however, which is apparently the commoner species. Smith has taken one specimen on March 27, 1912, and there is another in the Dwight Collection dated April 14 (no year).

86. *Ereunetes mauri*. WESTERN SANDPIPER.—Apparently commoner than the preceding. Smith has taken specimens between Oct. 22 (1908), and March 27 (1912), dates which are not at all representative.

87. *Crocethia alba*. SANDERLING.—Probably a regular winter visitant. Smith took specimens between Oct. 18 and Nov. 2, 1908. Merrill's report does not refer specifically to our region. He records it from Padre Island in July.

88. *Limosa fedoa*. MARBLED GODWIT.—Dresser (1866) noticed a few Godwits around Brownsville and Matamoros, and shot one. Merrill states that he took it in spring and autumn. There are no specimens in the American Museum, and no recent records.

89. *Limosa haemastica*. HUDSONIAN GODWIT.—Probably even today a regular transient in spring. Armstrong collected a fine series now in the Sanford Collection from May 3 to May 21, 1912, and there are specimens in the British Museum collected by him in April.

90. *Totanus melanoleucus*. GREATER YELLOW-LEGS.—Common winter resident, abundant transient. Specimens have been taken between Nov. 22 (1911), and April 15 (1877), dates which are not representative.

91. *Totanus flavipes*. LESSER YELLOW-LEGS.—An abundant transient, but less common than the last in winter, according to Merrill. In spite of this record, neither the A. O. U. 'Check-List' nor Mr. Ridgway's 'Birds of North and Middle America,' Part VIII, give this species as wintering so far north. We were accordingly interested to confirm Merrill's record in every particular. During our visit in January, 1923, we found the Greater much commoner on the coast in salt water, but on the inland prairies, flooded pastures, etc., the Lesser Yellow-legs was common, and greatly outnumbered its larger relative. We have seen specimens taken between Aug. 18, 1912, and May 24, 1912. Pearson also collected this species in December, 1921.

92. *Tringa solitaria solitaria*. SOLITARY SANDPIPER.—Apparently very few records for our region, but will undoubtedly prove to be a regular

transient. It is strange, however, that so keen an observer as Merrill did not meet with it. Dresser (1866) records a pair in mid-August, on a sand-bar in the Rio Grande. We have seen six specimens taken between March 17 (1912) and May 23 (1889). On Jan. 5, 1923, we twice flushed one of these familiar birds from the muddy bank of a resaca near Brownsville, but were unable to collect it. There seems to be no other North American winter record.

93. *Tringa solitaria cinnamomea*. WESTERN SOLITARY SANDPIPER.—Casual transient. A female collected April 20, 1912, by Smith has been referred to this subspecies by Dr. Dwight, an identification with which we concur. This is the first record for Texas so far as we know.

94. *Catoptrophorus semipalmatus semipalmatus*. WILLET.—We have had the greatest difficulty in ascertaining the status of the two Willets in our area, and are under great obligations to Dr. Dwight for his critical study of the material in his collection. The A. O. U. 'Check-List' gives the Western Willet as the breeding form on the coast of Texas. Ridgway curiously enough includes both races as breeding. He cites Fort Brown as the only breeding station west of Florida for the Eastern Willet. This statement is based presumably on Merrill's report, which however, is placed doubtfully under the Western in the synonymy. On the basis of the material from south Texas examined by us, we agree with Dr. Dwight that the breeding bird is the Eastern subspecies, and that the Western occurs in migration. We have seen no winter specimens, and cannot, therefore, state the status of the two races at this season. Breeding birds, however, from northeast Texas are apparently Western Willet, and this is the subspecies to which breeding material from Louisiana is unanimously referred, though we have seen none.

The Willet is a common permanent resident in our area. The breeding bird is in our opinion typical *semipalmatus*, and this or the next subspecies is common in winter. A nesting date is May 2, 1877. We have seen seven specimens taken between March 25 (1912) and May 15 (1902).

95. *Cataphorophorus semipalmatus inornatus*. WESTERN WILLET.—Known to us definitely only as a transient, but probably common in winter also. We have seen eight specimens taken from March 20 (1912) to May 15 (1902) and Sept. 22, 1911. Pearson found Willet in several places during December, 1921, which were presumably this subspecies.

96. *Bartramia longicauda*. UPLAND PLOVER.—Merrill gives a very full account of the occurrence of this species in its former abundance as a transient. It arrived in small flocks about the second or third week in March, and was found abundantly on grassy prairies, lingering until May 10. Late in July a few reappeared, it became abundant about Sept. 1 and disappeared the first week in October. It has greatly decreased in numbers, and Smith obtained no specimens. It still occurs every year according to Mr. R. D. Camp.

97. *Tryngites subruficollis*. BUFF-BREASTED SANDPIPER.—A regular transient, occurring on the prairies, similar in habit to the Upland Plover.

Dates before us are April 3 to 30, 1913, and Aug. 4, 1913, to Sept. 26, 1914.

98. **Actitis macularia.** SPOTTED SANDPIPER.—This well-known shorebird is apparently only a rare winter visitor, judging by the few records, but this is undoubtedly due to lack of observation. It should prove to be a common and regular transient, occasional in winter, as it winters commonly throughout Central America. Merrill reports it as rare in winter and Mrs. Bailey noted it on the Rio Coloral in the spring of 1900. Smith collected a specimen on Nov. 6, 1909. We saw one in one of the resacas near Brownsville on Jan. 4, 1923. The latest spring date is May 27, 1923 (Bent).

99. **Numenius americanus.** LONG-BILLED CURLEW.—In Merrill's time this handsome Curlew was common during winter, while a few remained to breed on the partly dried marshes near the coast. He found recently fledged young on June 16. Like so many of our larger shorebirds its range has shrunk and its numbers greatly decreased in the last fifty years, but it has apparently increased in southern Texas, if the testimony of the ranchmen can be believed, particularly as a summer resident. Mr. R. M. Kleberg, the owner of the great Laureles Ranch and an enthusiastic conservationist, assures us that ten years ago on his ranch it was chiefly a common winter resident, but has now become an abundant permanent resident. At the present time it can certainly be called abundant at least in winter, and it is impossible to spend a day on the prairies without finding it in large numbers.

100. **Numenius hudsonicus.** HUDSONIAN CURLEW.—Apparently a rare and little known transient. We have seen eleven birds collected by Armstrong from May 19 to 24, 1902, in the Dwight Collection. A specimen in the British Museum from the same collector is dated April 26.

101. **Numenius borealis.** ESKIMO CURLEW.—Formerly a common transient according to Merrill, though we cannot credit his statement that some passed the winter. There is a specimen taken April 2, 1889, in the Sennett Collection. Armstrong took ten specimens in March, now in the British Museum, in the late 80's or early 90's.

102. **Squatarola squatarola.** BLACK-BELLIED PLOVER.—It is surprising that this species was not recorded by Merrill, as it will undoubtedly prove to be a common transient and regular in winter, its known status further north at Corpus Christi. The Dwight Collection contains specimens taken by Smith between Sept. 30 and Nov. 28, 1911. We saw two on Jan. 4, and one on Jan. 10, near the coast east of Brownsville.

103. **Pluvialis dominica dominica.** GOLDEN PLOVER.—Reported as not rare in winter by Merrill, but this must be a mistake, as it winters only in southern South America. It undoubtedly occurs on spring migration. The only specimens we have seen were taken April 2, 1880 and April 20, 1913. There is a March specimen listed in the British Museum 'Catalogue' taken by Armstrong near Brownsville.

104. **Oxyechus vociferus vociferus.** KILLDEER.—A common per-

manent resident, extraordinarily abundant on the prairies and in all open country all winter.

105. **Charadrius semipalmatus.** SEMIPALMATED PLOVER.—Undoubtedly a common winter resident and abundant transient on the coast, but we have very little definite information. Armstrong sent three specimens to the Salvin and Godman Collection taken in April and May. Smith collected several on Oct. 1 and 3, 1911. We saw several near Point Isabel on Jan. 10, 1923.

106. **Charadrius melanotos.** PIPING PLOVER.—While a regular winter visitant at Corpus Christi, this species is apparently much rarer as far south as Brownsville, and the only record is a bird shot Oct. 28, 1908, near Point Isabel by Smith.

107. **Charadrius nivosus.** SNOWY PLOVER.—This is another species of which our local knowledge is very defective. It is known as a permanent resident at Corpus Christi, but the only local record is that of Smith who states that he obtained one at Point Isabel on Oct. 24, 1908. This specimen is not in the Dwight Collection.

108. **Pagolla wilsonia.** WILSON'S PLOVER—A common summer resident on the coast from March 15, 1881, to Aug. 6, 1908, but undoubtedly remaining much later. Merrill states that it is a "resident," but there is no further confirmation of this statement, and we did not meet with it during our winter trip.

109. **Podasocys montanus.** MOUNTAIN PLOVER.—An irregular winter visitant on the prairies, occurring at long intervals. A specimen was taken at Lomita, Jan. 11, 1881. Smith reports a flock of fifty on Nov. 11, 1908, near Point Isabel.

110. **Arenaria interpres morinella.** RUDDY TURNSTONE.—A common winter resident and transient, and apparently summering not infrequently, which led Merrill and Sennett to suppose that it bred. It is one of the species which is now well known to summer in its winter quarters. We have seen no specimen taken earlier than Oct. 17 (1908).

111. **Jacana spinosa.** MEXICAN JACANA.—This neotropical species reaches the extreme northern limit of its range near Brownsville. Merrill found a pair in August 1876. Armstrong obtained seven specimens now in the British Museum from March to July, including a juvenile. Smith saw a specimen which had been shot by a Mexican on June 2, 1908, on the Rio Grande half way between Brownsville and the mouth of the river.

112. **Colinus virginianus texanus.** TEXAS BOB-WHITE.—A common permanent resident. Nesting date, May 21, 16 eggs (Merrill).

113. **Callipepla squamata castanogastris.** CHESTNUT-BELLIED SCALED QUAIL.—In Merrill's and Sennett's time this bird was not known in the vicinity of Brownsville. Sennett found it at Lomita and Merrill at Hidalgo, and they found nests in this section as late as May 22. Smith, writing in 1910, states that it had extended its range southeastward, and could now be found within a few miles of Brownsville. However, it is only proper to state that Merrill records shooting one out of a covey within

two miles of Brownsville on Sept. 13, 1877, so that its alleged extension of range may well be due to defective observation. It is now well known to the natives by the name of Blue Quail, but is regarded as rare. We found one small covey in the thorny scrub country of the Norias "pasture" about 15 miles northwest of Brownsville, and it is said not to occur any nearer to the town. We have seen numerous specimens.

114. *Meleagris gallopavo intermedia*. RIO GRANDE TURKEY.—This race of the Wild Turkey was formerly common in thickly timbered sections, and the type locality is Lomita, where Sennett found it common along the Rio Grande. It apparently never occurred in the immediate vicinity of Brownsville (Merrill). At the present time it is still numerous on the great Norias Ranch, where Mr. Caesar Kleberg jealously protects it, and Pearson has estimated their numbers to be as high as ten thousand. We saw a flock from the train!

115. *Ortalis vetula mccallii*. CHACHALACA.—Every citizen in the Brownsville region knows the Chachalaca, or "Chacalac" as it is often called. It is one of the favorite game-birds, and would long since have disappeared, were it not for the impenetrability of its haunts, and its exceedingly shy and wary disposition. It is active only for a short time at dawn and sunset, and is almost impossible to find during the day. It affects the thickest and densest scrub along the edges of the more remote resacas, and is especially partial to the ebony tree. Its range extends up the Rio Grande valley for about 150 miles, but due north of Brownsville, we know of no records beyond the Rio Coloral. It is a permanent resident.

Miller and Griscom ('Auk,' 1921, p. 44) have argued that *mccallii* is a synonym of *vetula*.

116. *Columba flavirostris*.—RED-BILLED PIGEON.—A common summer resident, straggling as far north as Corpus Christi in early spring (Rhoads), but its exact northern breeding limit remains to be determined. It is characteristic of the heaviest timber along the resacas and the Rio Grande. A very few specimens have been taken in winter. The bird arrives in early spring, certainly by the end of February, and remains at least as late as Oct. 4. Nesting dates are from April 30 to June 6.

117. *Zenaidoura macroura marginella*. WESTERN MOURNING DOVE.—Common permanent resident, abundant in winter throughout the territory.

118. *Leptotila fulviventris brachyptera*. WHITE-FRONTED DOVE.—A common permanent resident in the heavy timber of the resacas, liking exactly the same country as the Chachalaca. It is a shy and secretive bird, which walks quietly about on the ground under the densest scrub, which it is impossible to penetrate quietly. It nests in May and June.

119. *Melopelia asiatica trudeaui*. WHITE-WINGED DOVE.—An abundant summer resident of the heaviest timber, according to Sennett the commonest of the woodland Pigeons at Lomita. The earliest arrival date is April 6, 1910, and it is recorded as departing in November by Dr. Finley. According to Sennett, it ranges north to El Sauz and the Rio Coloral.

Smith reports it as wintering, but secured no specimens at this season, and local residents all agree it does not occur at that season. We note that Mr. Ridgway does not regard specimens from our region as separable from typical *asiatica* of the West Indies.

120. *Chaemepelia passerina pallescens*. MEXICAN GROUND DOVE.—Common permanent resident.

121. *Scardafella inca*. INCA DOVE.—Common permanent resident, often coming into towns and settlements.

122. *Cathartes aura septentrionalis*. TURKEY VULTURE.—Common permanent resident.

123. *Coragyps urubu*. BLACK VULTURE.—Common permanent resident. We found it slightly more numerous than the Turkey Buzzard, especially near the coast.

124. *Elanoides forficatus*. SWALLOW-TAILED KITE.—A regular transient, apparently common in spring, but we have no fall records. It arrives about the middle of March and is reported as late as April 24 (1877).

125. *Elanus leucurus majusculus*. WHITE-TAILED KITE.—This beautiful Kite is a rare transient and winter resident, though this latter fact has not been previously recorded. Sennett collected one on May 5, 1878, and Mrs. Bailey reports it as seen in May, 1900, between Brownsville and Corpus Christi. The Dwight Collection contains 15 specimens from Brownsville taken between Oct. 19 (1909) and Feb. 21 (1897) of which three were shot in October, three in late November, five in mid-December, three in early January, and one in February.

126. *Ictinia mississippiensis*. MISSISSIPPI KITE.—Apparently a rare transient, of which there are two spring records only. Sennett saw small flocks totalling fifty birds on May 7, 1877, and Smith collected one near Brownsville on April 25, 1911. Mr. Camp assures us that this bird is occasionally noted.

127. *Circus hudsonius*. MARSH HAWK.—An abundant winter resident throughout the region, arriving according to Merrill in September and leaving in April.

128. *Accipiter velox*. SHARP-SHINNED HAWK.—An uncommon transient and winter resident. Specimens before us were taken between Sept. 2 (1912) and April 20 (1878).

129. *Accipiter cooperi*. COOPER'S HAWK.—An uncommon transient and winter resident, which has been taken between Oct. 12 (1888) and May 2 (1877). Frazar also shot one on July 2, 1880, at Lomita, which indicates that it breeds.

130. *Parabuteo unicinctus harrisi*. HARRIS' HAWK.—An abundant permanent resident, characteristic of the prairies. Nesting dates are April 22 to May 1.

131. *Buteo borealis borealis*. RED-TAILED HAWK.—Only one definite record, a specimen in the Dwight Collection taken near Brownsville on Feb. 27, 1897.

132. *Buteo borealis krideri*. KRIDER'S HAWK.—A young female

in the Sennett Collection shot at Lomita by Frazar on March 15, 1880, is apparently this subspecies, if it be not a color phase of an exceedingly variable species, whose plumages are not well understood. Albinism is of more frequent occurrence in the eastern Red-tail than melanism. Two birds in the Dwight Collection identified provisionally as *krideri* prove referable to other races. Merrill reports a pair near Fort Brown on Jan. 10, 1877, which seemed to approach *krideri*. Another specimen in the Sanford Collection was shot May 9, 1900.

133. **Buteo borealis calurus.** WESTERN RED-TAIL.—This subspecies is apparently the resident form, though definite evidence of its breeding is lacking. It is not as common as many other Hawks. We have seen specimens taken Jan. 16 and March 8, 1912, and April 21, 1894. Further collecting to settle the status of the various Red-tails in this region is vitally necessary.

134. **Buteo lineatus texanus.** TEXAS RED-SHOULDERED HAWK.—Status uncertain in our area, though it is a common permanent resident around Corpus Christi. Neither Merrill nor Sennett record any kind of Red-shouldered Hawk. However specimens in the Sennett Collection from Brownsville and Lomita, and a series taken by Smith near Brownsville were collected between Sept. 25 (1912) and Feb. 10 (1912). This would seem to indicate that it is an uncommon winter visitant. We saw none during our visit.

135. **Buteo abbreviatus.**—ZONE-TAILED HAWK. This species is recorded from our territory only by Smith, who in 1910 wrote that it was fairly well distributed in summer, preferring heavy timber, but that none were seen in winter. Later, however, he collected four birds in December, January and February. An earlier specimen taken by him was shot on April 27, 1909. It is surprising that this Hawk has been so generally overlooked, although nearly every *Buteo* is difficult to identify in the field. Students should be on the lookout for it.

136. **Buteo swainsoni.** SWAINSON'S HAWK.—Recorded by Merrill as occurring sparingly in winter. Noted near Santa Rosa in the spring of 1900 by Mrs. Bailey. Specimens in the Dwight Collection were taken on Sept. 14, 1911, Oct. 26, 1896, Jan. 4 and 7, 1912. It should occur chiefly as a transient from late March to May, and again in September, October and November.

137. **Buteo platypterus.** BROAD-WINGED HAWK.—Doubtless a regular and common transient, but we have no definite fall records. It might occur in winter. Spring specimens before us were taken from April 2 (1912) to May 7 (1877).

138. **Buteo albicaudatus sennetti.** SENNETT'S WHITE-TAILED HAWK.—Fairly common permanent resident. The beautiful adult is easily recognizable at a great distance. Nesting date, May 2, 1878 (Merrill).

139. **Asturina plagiata plagiata.** MEXICAN GOSHAWK.—Frazar collected two specimens at Lomita for the Sennett Collection, a juvenal female on Feb. 16, 1880, and another female on Aug. 23, 1880.

140. **Archibuteo ferrugineus.** FERRUGINOUS ROUGH-LEG.—Sennett's record of finding a nest on May 16, 1877, is undoubtedly erroneous. He did not collect a specimen, and undoubtedly saw some other Hawk, as this species does not nest much further south than Kansas and Colorado. It does, however, occur in winter. Mr. Caesar Kleberg shot a specimen on the prairies of the Norias Ranch on Dec. 6, 1921, and it was examined by Mr. T. Gilbert Pearson, who saw another twenty miles further south two days later. We saw a fine adult, also at Norias on Jan. 9, 1923. It is well-known to the ranchmen, who state that it differs from the other Hawks of the prairies in always roosting on the ground instead of on a shrub or telegraph pole.

141. **Aquila chrysaëtos.** GOLDEN EAGLE.—An accidental visitant. One shot near San Benito early in January, 1912, by H. N. Prentiss (Cf. Smith, 'Auk,' 1912, p. 255).

142. **Falco peregrinus anatum.** DUCK HAWK.—A fairly common transient and winter resident on the coast, living on the water-fowl, and arriving in the fall in their wake, according to Smith. We have seen specimens taken between Oct. 25, 1908, and April 10, 1890.

143. **Falco columbarius columbarius.** PIGEON HAWK.—A fairly common transient and winter visitant. There are specimens in the Sennett and Dwight Collections taken between October 19 (1909) and March 25 (1880) including a January and a February bird.

144. **Falco columbarius richardsoni.** RICHARDSON'S PIGEON HAWK.—A single specimen taken in "Cameron County," Feb. 4, 1889, in the Sanford Collection is the only record for our region. It should occur at least occasionally in winter.

145. **Falco fusco-caerulescens.** APLOMADO FALCON.—Merrill states that this handsome species is probably a not very uncommon summer resident and Smith, that it is quite common half way between Brownsville and Point Isabel. Three specimens in the Sennett Collection were taken on January 9, 1889, February 18, 1881, and February 18, 1889, and one in the Dwight Collection on June 1, 1894. Pearson saw one taken near Moro Island, December 20, 1921, about 35 miles north of Brownsville. Merrill found nests containing three eggs on June 16, 1877, and May 7, 1878. We did not see any, and believe it to be uncommon in winter. The Texas, Arizona and Mexican birds are readily separable from the South American form and should be known as *septentrionalis* Todd.

146. **Cerchneis sparveria sparveria.** SPARROW HAWK.—Abundant winter resident from about the middle of September until the early part of April (Merrill).

147. **Cerchneis sparveria phalaena.** DESERT SPARROW HAWK.—A single specimen of this subspecies is in the Dwight Collection. It was taken in Cameron County January 7, 1889.

148. **Polyborus cheriway.** AUDUBON'S CARACARA.—A common permanent resident. Merrill states that it is more abundant in winter than in summer.

149. **Pandion haliaetus carolinensis.** OSPREY.—Apparently chiefly a transient, although Smith states that it is resident in the maritime section of our region. The only specimen we have seen was collected at Brownsville, October 28, 1909. Mrs. Bailey recorded it from the Rio Coloral in the spring of 1900, and Pearson found three on Moro Island, December 20, 1921. It might occur in winter.

150. **Tyto pratincola.** BARN OWL.—A fairly common permanent resident on the lower Rio Grande. Merrill, Sennett and Singley noted that it bred in holes in the banks of the river as well as in a belfry and in ruined buildings. Pearson records one that was captured at El Sauz Ranch early in December, 1921. There are six specimens from our region in the Sennett and Dwight Collections.

151. **Asio wilsonianus.** LONG-EARED OWL.—A single specimen in the Dwight Collection was taken at Brownsville, December 7, 1892. Another was shot by Smith near Brownsville, Jan. 4, 1912 ('Auk,' 1912, p. 255).

(To be continued.)

NOTES ON THE BIRDS OBSERVED IN THE LOWER
RIO GRANDE VALLEY OF TEXAS DURING
MAY, 1924.

BY HERBERT FRIEDMANN.

Plates XXV-XXIX.

In the course of my Cowbird studies conducted under a grant from the National Research Council I spent the month of May in the field at Brownsville, Texas and vicinity. While the main object of the trip was the Red-eyed Cowbird, and to a lesser extent the Dwarf Cowbird, numerous notes were made daily of the other birds as well, and these notes form the basis of the present paper.

The lower Rio Grande valley is a region of great ornithological interest because of the Mexican and Central American birds that occur there and nowhere else in the United States. Such are the Mexican Grebe, Mexican Cormorant, Mottled Duck, Chachalaca, Red-billed Pigeon, White-fronted Dove, Inca Dove, Groove-billed Ani, Couch's Kingbird, Derby Flycatcher, Green Jay, Varied Bunting, and Rio Grande Yellow-throat. Another point of interest in this region is the historical one, associated as it is with the names of many of our earlier ornithologists, particularly

with those of Sennett and Merrill. The work of these two men repeatedly forces itself on one's mind in the field with each specimen of Sennett's Thrasher, Sennett's Hooded Oriole, Sennett's Titmouse, Sennett's White-tailed Hawk, and Merrill's Parauque.

The country around Brownsville is largely sandy in nature and covered with a thick growth of cactus, (chiefly Opuntias), mesquite, and Spanish dagger, (Yucca)—a typical chapparal vegetation, while here and there numerous resacas, (blind, narrow, long, river-like lakes), intersect the otherwise dry landscape. Large tracts of the mesquite country are now cleared and under cultivation and these new lands are of great promise in the citrus fruit industry.

The coast of this part of Texas borders not on the Gulf of Mexico itself but on the Laguna de la Madre, a long, narrow, sheltered stretch of waters protected from the storms of the Gulf by a narrow sand-bar running in an almost due north and south direction for over 100 miles. In this laguna are several islands, one of which, Green Island, now an Audubon Society reservation, was visited for a few days.

During the entire stay in Texas the greatest possible assistance in the prosecution of field work was rendered by Mr. R. D. Camp, the game warden of Cameron County, who gave generously of his time and advice based on long years of familiarity with the country and the birds. For the first two weeks of May, I enjoyed the company and enthusiastic cooperation of Dr. A. H. Cordier of Kansas City, Mo.

The annotated list of birds observed follows:

1. **Colymbus dominicus brachypterus.** MEXICAN GREBE.—This little Grebe was fairly common in some of the resacas but was rather difficult to observe because of its shyness and small size. Like all Grebes they are expert divers and very rarely allow a close approach. On May 27, Mr. Camp found three nests of this Grebe; two of them were empty, and one contained three eggs.

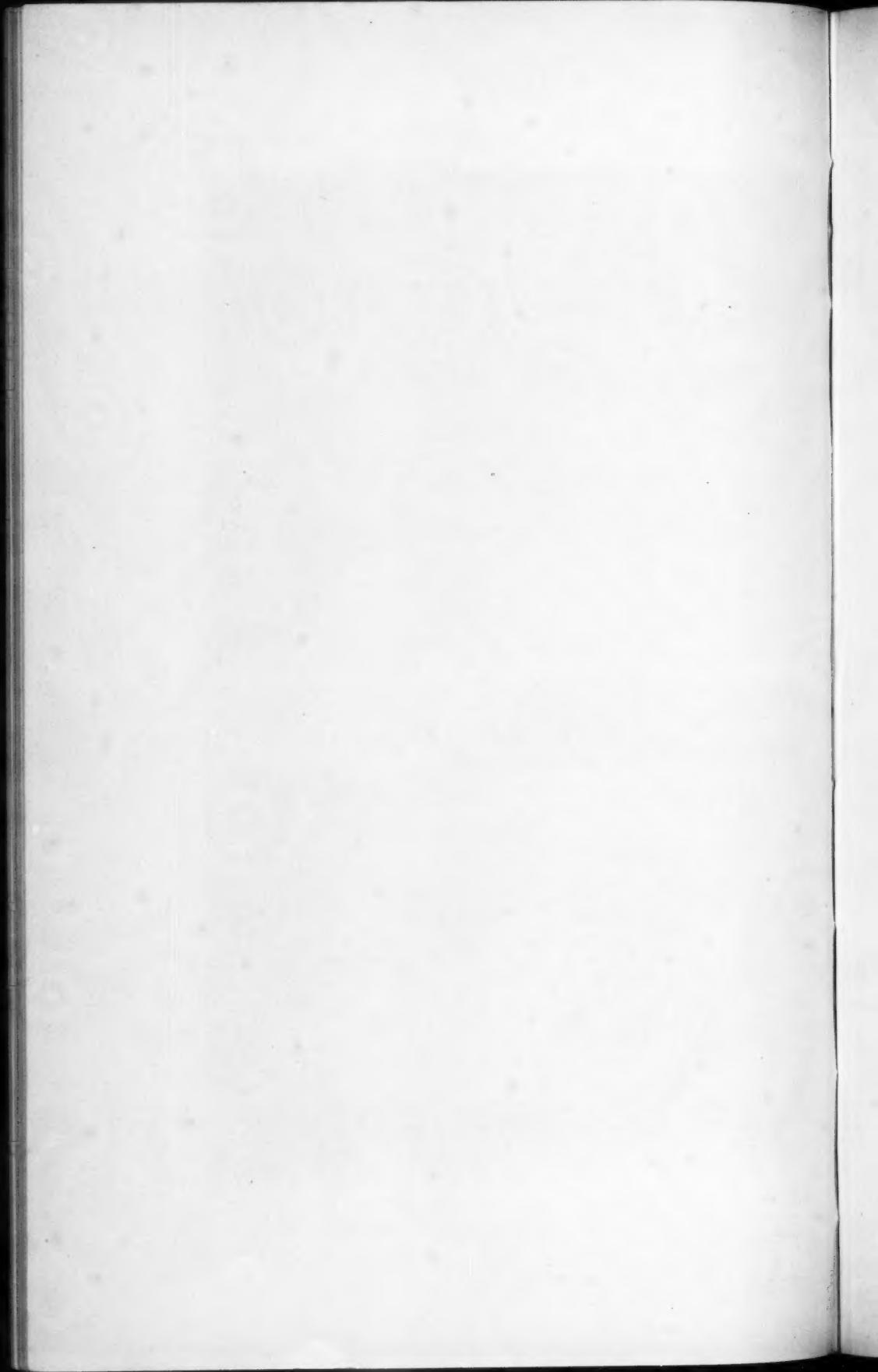
2. **Podilymbus podiceps.** PIED-BILLED GREBE.—Not uncommon. Several were noted swimming in a large pond together with a great number of Coots.

3. **Larus atricilla.** LAUGHING GULL.—Very abundant. By far the commonest water bird in the region. On May 31, at the bird reservation in Bahia Grande, Camp estimated the number of Laughing Gulls at around 4000. Countless nests were noted on two of the islands in this reservation.

4. **Gelochelidon nilotica.** GULL-BILLED TERN.—Very abundant at



1. NEST OF SENNETT'S THRASHER.
2. NEST OF LOMITA WREN.



Bahia Grande. It was by all odds the commonest species of Tern there, on May 31. The number was estimated at about 2000. The birds were nesting in large numbers and nests with eggs as well as young birds were very numerous.

5. **Sterna caspia imperator.** COUES' CASPIAN TERN.—Abundant. Many seen at various times during the month. About 1000 at Bahia Grande, May 31. The bright red beak and black crown make this large Tern very striking in appearance. They go about singly a great deal more than I expected.

6. **Sterna maxima.** ROYAL TERN.—Common, but less so than the preceding. At Bahia Grande there were around 500 of these birds breeding. This and the preceding species are very similar in their habits, but are easily identified in life by the color of the beak and the difference in the color of the forehead.

7. **Sterna sandvicensis acuflavida.** CABOT'S TERN.—About 500 seen at Bahia Grande on May 31. Several seen flying over the Laguna de la Madre, May 11-13. They feed quite a little in the wet meadows as well as in the water.

8. **Sterna forsteri.** FORSTER'S TERN.—Not uncommon. About 100 in Bahia Grande May 31.

9. **Sterna antillarum.** LEAST TERN.—About 100 at Bahia Grande, May 31. Otherwise only one other specimen noted, a lone bird flying over Green Island on May 12.

10. **Chlidonias nigra surinamensis.** BLACK TERN.—Very common. Noted many times in good numbers. Although there are apparently no authentic breeding records for this bird in this region, the species doubtless breeds here. All the birds were in full breeding plumage. On two occasions flocks of this species were seen chasing Laughing Gulls and once they were noted pursuing a Reddish Egret.

11. **Rynchops nigra.** BLACK SKIMMER.—Common. These curious birds were first noted on Green Island on May 12, but later many were seen at various places. At Bahia Grande on May 31, there were found over 500 of them breeding. When resting on the beach all the members of the flock seem invariably to face in the same direction, giving the flock a wooden look from a distance. On several occasions they were watched skimming the surface of the water with the lower mandibles but were never seen to catch anything. They were never seen to plunge the way the Terns do.

12. **Anhinga anhinga.** WATER-TURKEY.—Uncommon. On May 7, Dr. Cordier and I saw two Water-turkeys flying overhead back of Fort Brown. This was the only time this species was noted.

13. **Phalacrocorax vigua mexicanus.** MEXICAN CORMORANT.—Common, being noted in flocks on many occasions during the month. At Bahia Grande on May 31, about 500 were found. Nothing particularly noteworthy was noticed about their habits.

14. **Pelecanus erythrorhynchus.** WHITE PELICAN.—Common.

Several flocks were seen at different times, the largest one containing over 200 birds, and the smallest one 11 birds. These birds probably breed somewhere near Brownsville although they are not definitely known to do so. They were very shy at all times and close inspection was out of the question. Although I examined many of the birds through 8x glasses I did not notice any with the knob on the bill.

15. *Pelecanus occidentalis*. BROWN PELICAN.—Uncommon. Noted but once, a flock of 11 flying over the Laguna de la Madre on May 10.

16. *Fregata aquila*. MAN-O'-WAR-BIRD.—Only one noted. On May 12, while camped on Green Island, a bird of this species perched on the mast of our boat.

17. *Lophodytes cucullatus*. HOODED Merganser.—One male noted May 7.

18. *Anas fulvigula maculosa*. MOTTLED DUCK.—One noted May 7.

19. *Chaulelasinus streperus*. GADWALL.—A pair seen swimming with a few Scaups and many Coots on May 7.

20. *Querquedula discors*. BLUE-WINGED TEAL.—Several noted during the month. Mr. Camp inclines to the opinion that the species may breed in southern Texas.

21. *Spatula clypeata*. SHOVELLER.—Common everywhere and surprisingly tame. They will let railroad trains go by close to them without flying or seeming to be the least frightened.

22. *Dafila acuta*. PINTAIL.—Uncommon. Observed only once.

23. *Marila affinis*. LESSER SCAUP.—Common in most of the resacas visited. By far the greater part were females, the ratio being about 15 females to 1 male seen.

24. *Erisomatura jamaicensis*. RUDDY DUCK.—Uncommon. One pair noted.

25. *Ajaia ajaja*. ROSEATE SPOONBILL.—One of the most gratifying results of the trip was the finding that these beautiful birds are by no means uncommon in this part of southern Texas. At Bahia Grande on May 31, a flock of about 75-100 was seen feeding in the shallow water together with a flock of Wood Ibises. Mr. Camp has found as many as 1000 Spoonbills feeding here at a time recently and sees a good number almost every time he visits this spot. The birds are not known to breed anywhere in this immediate vicinity, but there is said to be a large colony a little south of here in Mexico.

26. *Mycteria americana*. WOOD IBIS.—Fairly common. Seen only at Bahia Grande and immediate vicinity. On May 31, four flocks were noted, one of 21, one of 7, one of 6, and one of 13 birds. The first flock (of 21 birds) was seen feeding with the Roseate Spoonbills mentioned above.

27. *Botaurus lentiginosus*. BITTERN.—Uncommon. Only one seen.

28. *Ixobrychus exilis*. LEAST BITTERN.—Fairly common. Several noted on different occasions.

29. *Ardea herodias wardi*. WARD'S HERON.—Very common. On Green Island, May 11 to 13, about 40 nests with eggs or young were found



1. NEST OF VERA CRUZ REDWING.
2. NEST OF GRAY-TAILED CARDINAL.
UPPER EGG THAT OF DWARF COWBIRD.

and many others that were empty. A pair of coyotes had been very destructive to all the nesting birds on the island and this bird was no exception. By far more destructive than the coyotes however, were the Great-tailed Grackles which broke and devoured countless eggs of this and other Herons. In their flight and general habits these birds are not different from the typical, northern Great Blue Herons.

30. **Casmerodius egretta.** EGRET.—Rather uncommon. The only ones seen were noted from a railroad train window at a spot about 15 miles out of Brownsville where 6 were noticed flying by.

31. **Egretta candidissima candidissima.** SNOWY EGRET.—Not uncommon. On Green Island on May 12, 4 flocks were noted, one of 4, one of 3, one of 7, and one of 11 birds. They were not yet nesting, but regularly breed on the island in fair numbers. They were very wary, but the color of the feet made it an easy matter to tell them in flight.

32. **Dichromanassa rufescens.** REDDISH EGRET.—Very common on Green Island where several hundreds were observed May 11-13. Several were also seen on the mainland at various times. These birds were the main object of the visit to the island and it was a matter of considerable disappointment to find them not yet nesting. The standing and perching attitudes of these otherwise graceful Herons are remarkably wooden and stiff. In fact from a distance a group of these birds, standing in the shallow water, looks like a flock of large decoys. On one occasion one of these birds was seen chased by a flock of Black Terns. On Green Island there was one old bird that always fed off by itself and drove off any other Egrets that came within twenty feet of it. It was always to be found in the same spot and was always alone. During the day most of the birds would desert the island and feed over a wide range of territory, and along towards dusk would return in groups of from 5 to 50, flying with slow, sedate beats of their wings, necks drawn back in typical Heron fashion. After dark the birds would remain in the tallest bushes where they passed the night and save for the occasional call of some individual that had been disturbed by something, the island was silent. A few birds in the white phase were noted on the island.

33. **Hydranassa tricolor ruficollis.** LOUISIANA HERON.—Very common. Many good-sized flocks seen everywhere and hardly a day went by but some would be seen. On Green Island they were very numerous, and on one of the islands in Bahia Grande, Camp found that many of them were nesting on the ground, a very unusual procedure for this species.

34. **Florida caerulea.** LITTLE BLUE HERON.—Uncommon. A flock of three were noted at Green Island by Dr. Cordier and myself on May 12, and the next morning four were seen. No others were noted anywhere else during the month.

35. **Butorides virescens virescens.** GREEN HERON.—Fairly common. Several were seen at various times, all singly.

36. **Nycticorax nycticorax naevius.** BLACK-CROWNED NIGHT HERON.—Fairly common. On Green Island there was a breeding colony

of some 25 or 30 pairs. Several others were noted from time to time elsewhere as well.

37. **Porzana carolina.** SORA.—Not uncommon. Several were seen sneaking through the cat-tails in a resaca near Brownsville on May 7. In the same place a few days later a few more were noted.

38. **Ionornis martinicus.** PURPLE GALLINULE.—Uncommon. Only one noted, a bird shot by Camp on May 7. The bird was a female.

39. **Gallinula galeata.** FLORIDA GALLINULE.—Common in almost all the resacas. In some places it was possible to see several in the course of a few minutes. This bird is a common breeder in this region.

40. **Fulica americana.** COOT.—Extremely abundant. Every body of fairly open water was sure to be dotted with numbers of Coots. In some of the larger ponds and resacas there were literally hundreds of Coots, and the total number observed during the entire month, if it were possible to estimate it, would doubtless run high in the thousands. The Coots were rather tame, much more so than the Gallinules.

41. **Steganopus tricolor.** WILSON'S PHALAROPE.—Only one seen,—a female in beautiful spring plumage. It was watched "spinning" in a little pool of water on May 7. The bird kept turning around and around rapidly always remaining in the same spot. It kept this up for about 5 minutes and then suddenly stopped and remained quiet and still.

42. **Recurvirostra americana.** AVOCET.—Observed only at Bahia Grande on May 31, when Camp found six, one of which he collected. The birds were apparently breeding, thus forming the third consecutive season for the breeding of this species in the lower Rio Grande valley.

43. **Himantopus mexicanus.** BLACK-NECKED STILT.—Fairly common. About a dozen birds seen. Two pairs were found with newly finished, but empty, nests on May 6. and later on these birds were always found in the same general locality, but the nests were never found.

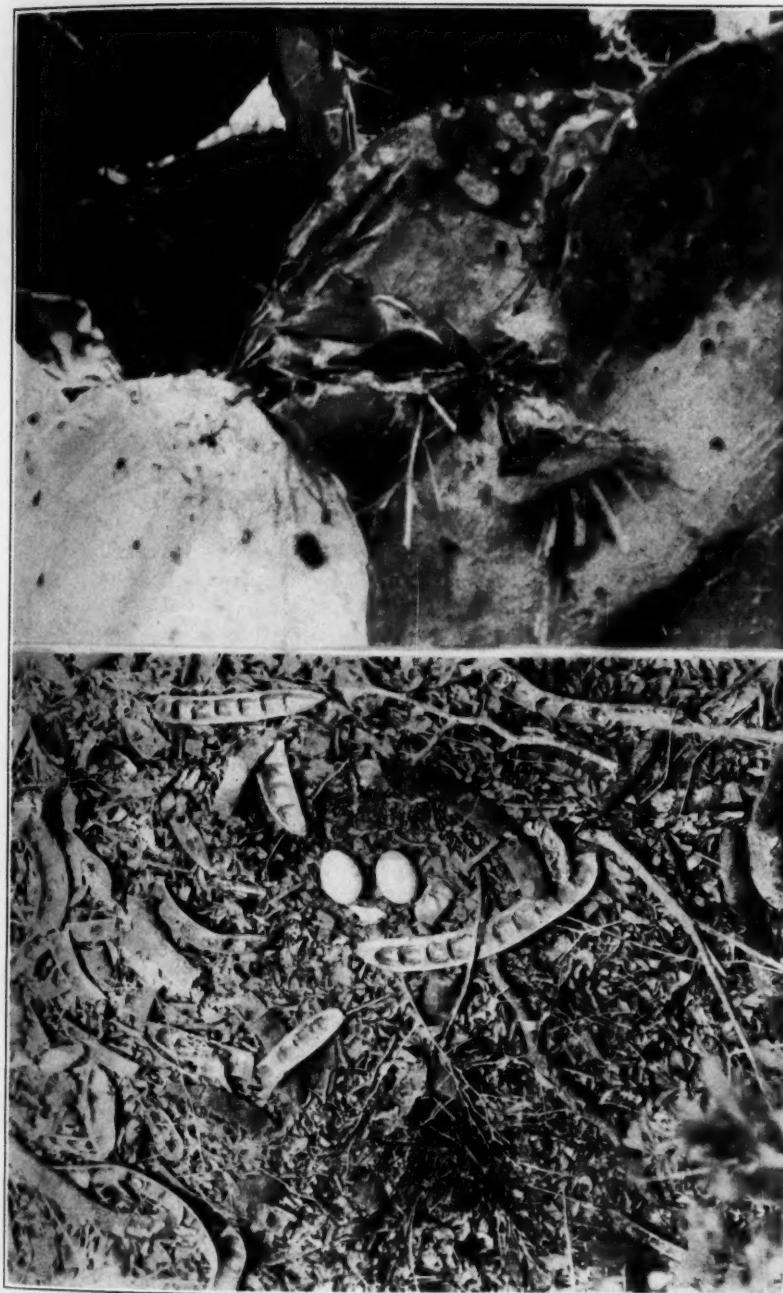
44. **Limnodromus griseus scolopaceus.** LONG-BILLED DOWITCHER.—Uncommon. One bird, probably of this subspecies was noted on the beach at Point Isabel on May 10. The subspecific identification of the bird was based entirely on geographical grounds.

45. **Micropalama himantopus.** STILT SANDPIPER.—Only one specimen observed. At a distance this species resembles the Summer Yellow-legs, but the barred underparts and the color of the legs render it easy of identification.

46. **Pisobia minutilla.** LEAST SANDPIPER.—Not uncommon. As many as 7 or 8 could be seen together at times, but no large flocks such as are common on the Atlantic coast were seen. A small group of these Sandpipers stayed in a certain spot for several days and when chased off always returned to the same place although there were many other spots near by just as suitable.

47. **Crocethia alba.** SANDERLING.—Several seen on the beach at Point Isabel on May 10.

48. **Totanus flavipes.** YELLOW-LEGS.—Not uncommon. Two of



1. TEXAS WREN NEAR ITS NEST IN AN OPUNTIA.
2. EGGS OF MERRILL'S PARAUQUE.

these birds remained in a small marshy spot the whole month and was still there the last time that spot was visited. They refused to leave the place and acted just as though they had a nest there. Of course the species is not known to breed anywhere so far south and this made the action of the birds all the more puzzling.

49. **Catoptrophorus semipalmatus inornatus.** WESTERN WILLET.—Very common in all the grassy plains and sometimes in rather dry locations fairly distant from water. The striking wing pattern of this otherwise plain colored bird is very obviously a marking of the "flash" type like the white rump of a Flicker, for as soon as the bird closes its wings it disappears into the monotonous gray of its background. The birds were almost all in pairs. Nests with eggs reported by several people during the last two weeks of May.

50. **Actitis macularia.** SPOTTED SANDPIPER.—Uncommon. One was noted on Green Island, May 12, and two near Point Isabel, May 13.

51. **Numenius americanus.** LONG-BILLED CURLEW. Very common in the wet grassy plains between Brownsville and Point Isabel, becoming less common towards the end of the month. When flying they draw back the neck, Heron fashion, and look more like large Plover with enormously long bills than like the long-billed brownish Willets.

52. **Numenius hudsonicus.** HUDSONIAN CURLEW.—Uncommon. A flock of four was seen near some of the preceding species on May 14.

53. **Oxyechus vociferus vociferus.** KILLDEER.—Uncommon. This species doubtless breeds here, as a pair seen acted very much as though they had a nest. The broken-wing ruse was used several times by one of the birds and both showed great concern whenever anyone went near the place where the nest probably was. A search failed to reveal any nest however.

54. **Charadrius semipalmatus.** SEMIPALMATED PLOVER.—Uncommon. Only once observed, on the beach at Point Isabel.

55. **Pagolla wilsonia.** WILSON'S PLOVER.—Only one specimen seen, a bird shot by Camp.

56. **Podasocys montanus.** MOUNTAIN PLOVER.—One seen. This bird is apparently rare here.

57. **Arenaria interpres morinella.** RUDDY TURNSTONE.—One seen on the beach at Point Isabel, May 10.

58. **Colinus virginianus texanus.** TEXAS BOB-WHITE.—Common. Many coveys seen at various times during the month.

59. **Ortalis vetula mccallii.** CHACHALACA.—Fairly common in the thickest, most inaccessible parts of the mesquite "woods." These birds are probably the shyest of all the birds in southern Texas and are extremely difficult to observe. On May 18, in what is known locally as the "palm grove," a typical Florida everglade type of forest, one was heard giving its ordinary call note. The next day, at Jagou's ranch, a place several miles from Brownsville, one was also heard in the mesquite thickets, but was not seen. Three days later at a place nearer to Brownsville I

spent a few hours stalking Chachalacas and was rewarded with a moment's view of two birds. They perch in the trees and remain motionless until they get ready to fly and then go so quickly that the observer usually only then discovers where they were. Five others were heard giving the true Chachalaca call or what amounts to the real song of this bird. A lone Chachalaca sounds like a small flock of harsh grating Geese, each honking out of time with all the rest. There is a peculiar quality in the song, if it may so be called, of this bird that makes it sound as though several birds were uttering it at various distances from the listener and even in slightly different directions from him.

60. ***Columba flavirostris*.** RED-BILLED PIGEON.—Not uncommon in wooded places. This bird is entirely a woodland species, never occurring in the open chapparal as do the Mourning, Mexican Ground, and Inca Doves. They are peculiar in that they lay but one egg, a large white one rather larger than the average in relation to the size of the bird. A nest with a single egg was found May 7.

61. ***Zenaidura macroura marginella*.** WESTERN MOURNING DOVE.—Very common, nesting chiefly in the Prickly Pear Cactus. The incubating birds were very tame and a photograph was taken without any blind or previous preparations. Twenty-three occupied nests were found.

62. ***Leptotila fulviventris brachyptera*.** WHITE-FRONTED DOVE.—Not uncommon in a few places, but otherwise rather scarce. Like the Red-billed Pigeon, this bird is a woodland bird, but sometimes feeds in fairly open places. At Jagou's ranch a couple of these Doves had become very tame and used to feed in the yard with the Chickens. In the woods at this ranch two nests were found, each with two eggs, on May 19. The nests were each about 7 feet from the ground on horizontal limbs and were of the usual crude construction of Dove's nests in general.

63. ***Melopelia asiatica trudeaui*.** WHITE-WINGED DOVE.—Fairly common. These Doves are found both in the open chapparal and in the edges of woods. At times they are very noisy and their cooing is the most noticeable sound in some places. Three nests with two eggs each were located, all in trees in thin woods. When perching on a twig or feeding on the ground they look a good deal like the Mourning Dove, but as soon as they begin to fly their identity is revealed by the conspicuous white markings on the wings.

64. ***Chaemepelia passerina pallescens*.** MEXICAN GROUND DOVE.—Very abundant. This small Dove is one of the most characteristic birds of the cactus, mesquite country. It nests abundantly in the Prickly Pears, usually at least four feet from the ground but sometimes even lower. This bird has never been recorded as a victim of the Dwarf Cowbird, but Camp told me that he had found a victimized nest of this Dove, and on May 23, I found a nest with the usual two Dove's eggs and one egg of *Molothrus ater obscurus*. All in all a dozen nests of this Dove were found.

65. ***Scardafella inca*.** INCA DOVE.—The least common of all the

Doves. Strange to say the few specimens observed were all seen in the backyards in the town of Brownsville, and although they were looked for elsewhere none were noted. They undoubtedly do occur in the surrounding country, but the fact that none were seen indicates their scarcity.

66. ***Cathartes aura septentrionalis*.** TURKEY VULTURE.—Common but less so than the following species.

67. ***Coragyps urubu*.** BLACK VULTURE.—Much commoner than the preceding bird. Flocks were noticed frequently, particularly in the cattle areas. The shorter tail and more frequent wing beats serve to tell this bird from the preceding at almost any distance within the range of vision.

68. ***Accipiter cooperi*.** COOPER'S HAWK.—Uncommon. Only one noted, a dead bird on Green Island, May 12. The bird had been shot by one of the wardens some days before.

69. ***Parabuteo unicinctus harrisi*.** HARRIS'S HAWK.—Fairly common. These Hawks are very terrestrial, resembling Marsh Hawks in this respect. When on the ground they bear a general resemblance at a distance to Black Vultures, but as soon as they rise the white rump dispells any doubt as to their identity.

70. ***Buteo albicaudatus sennetti*.** SENNETT'S WHITE-TAILED HAWK.—Not uncommon. On May 14 Dr. Cordier and I examined and photographed a nest of this bird containing three well grown young. The nest was in the top of a Spanish dagger about eight feet tall. While working at the nest Dr. Cordier saw one of the old birds fly towards him and circle around about a sixth of a mile away. It had what appeared to be a lizard in its talons. When it stopped coming toward the nest the bird dropped the lizard but swooped down after it and caught it in the air. It then did this a second time and finally dropped it a third time and made no attempt to catch it. Both the other times it caught the lizard with its claws. The old birds scream very much like Red-tailed Hawks. One of the adult birds seemed to be fond of perching on telegraph poles, probably because they provided higher perches than did the tallest yuccas or mesquite trees.

71. ***Falco columbarius columbarius*.** PIGEON HAWK.—Rare. A badly mutilated dead bird was seen on Green Island on May 11, but it had evidently been dead quite some time.

72. ***Falco fusco-caerulescens*.** APLOMADO FALCON.—Uncommon. Only one bird seen. An old nest of this species was found by Camp. The nest was in a yucca about seven feet high.

73. ***Cerchneis sparveria sparveria*.** SPARROW HAWK.—Uncommon. A few individuals were noted during the month.

74. ***Polyborus cheriway*.** AUDUBON'S CARACARA.—Not uncommon generally, at times said to be very common. Several were seen and one nest found. The nest was in a yucca about eight feet high, and was apparently just recently evacuated by the young. The old birds are rather given to perching on telegraph poles, and from these positions they have an appearance more ferocious than their natures would justify. They seem to be rather timid and feed to a large extent on carrion.

75. *Otus asio mccallii*. TEXAS SCREECH OWL.—Not uncommon. A family of two adults and four fully-fledged young were seen in a tree near the Brownsville railroad depot on May 9. All were in the gray phase.

76. *Crotophaga sulcirostris*. GROOVE-BILLED ANI.—Fairly common in some places. These birds are found in dense thickets, usually in moist woods or not far from water, and sometimes in thinly wooded swamps. Their call note is quite peculiar, consisting of two syllables, the first accented and slightly lower than the second which is somewhat clearer and less throaty. The call is more or less similar in sound to a hic-cough, but cat-like. Some of the birds seen were apparently in pairs and some in small flocks.

77. *Geococcyx californianus*. ROAD-RUNNER.—Less common than the preceding but inhabiting a very different type of country. This is pre-eminently a bird of the cactus and dry sandy country in general. One was seen perching on a fence post.

78. *Coccyzus americanus americanus*. YELLOW-BILLED CUCKOO.—Common in the wooded districts. These birds were either heard or seen almost daily.

79. *Coccyzus erythrophthalmus*. BLACK-BILLED CUCKOO.—Rare. One bird collected by Camp, May 16, is the only record.

80. *Ceryle americana septentrionalis*. TEXAS KINGFISHER.—Not uncommon. Several were seen at intervals during the month.

81. *Dryobates scalaris bairdi*. TEXAS WOODPECKER.—Common. In its actions and notes this bird is very similar to the Downy Woodpecker of the northern states. Two nests were found both in dead stumps; one nest was in a hole about four feet from the ground and the other at an altitude of ten feet.

82. *Centurus aurifrons*. GOLDEN-FRONTED WOODPECKER.—Common. This bird is an inhabitant of open country, nesting in fence posts, telegraph poles and trees in meadows, etc. It was not observed at all in forested country. Two nests were examined and both had young birds in them. Along the railroad tracks on the road from Brownsville to Point Isabel almost every telegraph pole had a hole in it made, according to Camp, by Golden-fronted Woodpeckers.

83. *Nyctidromus albicollis merrilli*. MERRILL'S PARAUQUE. Not uncommon. On May 9, a bird of this species was flushed from its "nest." The two eggs, creamy buff in color with light lavender-brown spots were laid on the ground, the only pretense at a nest being a few rearranged leaves and straws. On May 19, at Jagou's ranch several were heard and one was seen.

84. *Chordeiles virginianus henryi*. WESTERN Nighthawk.—Only one specimen was positively identified, a bird collected by Camp, on May 22. Several others, probably of this species, were seen at the same time. In life this bird looks very similar to the following species, but the difference in the darkness of the coloring, particularly of the underparts is a fairly good field mark.

85. **Chordeiles acutipennis texensis.** TEXAS NIGHTHAWK.—Common. On May 9, two eggs of this species were found laid on the bare ground with no pretense of a nest. This bird was seen booming a great deal towards the latter part of the month. The aerial evolutions that go with the booming are the same as in the other species, the local race of which, however, was not observed booming.

86. **Archilochus colubris.** RUBY-THROATED HUMMINGBIRD.—On Green Island, May 11–13, this species was very numerous darting among the flowers of the opuntias. The distribution of the sexes seemed about equal. The birds were probably migrants as there seemed to be no pairing off among them. At Brownsville, and on the mainland in general, not many of these Hummingbirds were noted.

87. **Archilochus alexandri.** BLACK-CHINNED HUMMINGBIRD.—Uncommon. The only one seen was observed with several of the preceding species at Green Island, on May 12. The bird was a male.

88. **Muscivora forficata.** SCISSOR-TAILED FLYCATCHER.—Fairly common. These graceful birds have a disposition, not in keeping with the beauty of their plumage, for they are pugnacious and frequently harrass Hawks, Ravens, and even small Herons at times. They seem to prefer low perches to high ones, a very unusual thing for a fly-catching species. The only notes heard were little, explosive *dzeep* sounds, much like those of the Kingbird in quality.

89. **Tyrannus tyrannus.** KINGBIRD.—Very common on Green Island, May 11–13, where they occurred in large flocks. They were all probably migrating birds. On the mainland several were seen at different times, but they were not very numerous.

90. **Tyrannus melancholicus couchi.** COUCH'S KINGBIRD.—Fairly common, chiefly around edges of woods and in mesquite country. These birds seem to be less active than the preceding species and also less pugnacious.

91. **Pitangus sulphuratus derbianus.** DERBY FLYCATCHER.—Not uncommon. Several individuals were seen from time to time and two nests were found. The first of these was noted at Jagou's ranch on May 19. It was high up in a tall tree and all around it were bunches of Spanish moss, but none of the moss was actually on or suspended from the nest. The position of the nest was such that it was impossible to climb to it to examine the contents. One of the old birds was heard calling near by.

The second nest was collected by Camp on May 29, and contained four eggs. It was built on top of an old nest of a Mexican Cormorant in a dead tree standing in shallow water. I was previously familiar with another race of this bird, *P. s. bolivianus* in life in Argentina and was struck by the close resemblance in the notes of the two. In fact the first Derby Flycatcher was first identified by its note before the bird itself was seen.

92. **Myiarchus magister nelsoni.** MEXICAN CRESTED FLYCATCHER.—Fairly common. This bird is more a bird of the open than the Crested

Flycatcher of the northern states, and nests commonly in fence posts bordering open fields. It also seems to be more silent as not a note was heard from one of them during the whole month. Two nests, each with five eggs were found. Both were in stumps used as fence posts.

93. **Sayornis phoebe.** PHOEBE.—Uncommon. A few were seen in Green Island, May 12. No others were noted elsewhere.

94. **Myiochanes virens.** WOOD PEWEE.—Several were heard singing, but only one bird was seen during the month.

95. **Empidonax traillii traillii.** TRAILL'S FLYCATCHER.—A small greenish Flycatcher was seen on Green Island on May 11, and it gave a note like that of the Alder Flycatcher, and probably belongs to this race. Later a couple more were seen in the same day and place.

96. **Otocoris alpestris giraudi.** TEXAS HORNED LARK.—A Horned Lark was seen on a road between Brownsville and Point Isabel, on May 14. On geographical grounds solely rests the subspecific identification here given.

97. **Xanthoura luxuosa glaucescens.** GREEN JAY.—Fairly common. About a dozen seen during the month. A nest with four young about four days old was found on May 9. The nest was in a crotch of a sapling about seven feet up and was built of small twigs, straws, plant fibers, etc. The young were still blind but the primary and secondary quills were beginning to sprout and were dull bluish in color. The top of the head and the spinal tract, (both the skin and the neosoptiles), were greenish gray in color. The adult birds are very shy at the nest and it was hopeless to try and photograph them.

98. **Corvus cryptoleucus.** WHITE-NECKED RAVEN.—These small Ravens were rather uncommon, only three being noted. The white in the neck of course never shows in the field and at a distance they look like crows.

99. **Molothrus ater ater.** COWBIRD.—Inasmuch as all observations and notes made on all three Cowbirds will be used for later publication and are too bulky to be inserted in an annotated list, a brief summary will suffice here.

The typical form of the Cowbird was seen a few times together with some of the next race around the horse corrals at Fort Brown. Camp believes that both races breed here, but if this should be demonstrated and the two found breeding side by side in the same area, it would be necessary to recognize the Dwarf Cowbird as a separate species. Probably *M. a. ater* does not breed here, but only winters here. Some *obscurus* eggs are nearly as large as some straight *ater* eggs.

100. **Molothrus ater obscurus.** DWARF COWBIRD.—Common, especially around the cavalry stables at Fort Brown. Its eggs were found in the nests of the following species:—Mexican Ground Dove, Sennett's Hooded Oriole, Audubon's Oriole, Gray-tailed Cardinal, Long-tailed Chat, and Verdin, while Camp informed me that he has found eggs of this Cow-



1. NEST OF MEXICAN CRESTED FLYCATCHER.

2. NEST OF WARD'S HERON.

bird commonly in the nests of the Black-throated Sparrow and Small White-eyed Vireo, and also in nests of the Sennett's and Curve-billed Thrashers. Of these birds, the following have never been recorded as victims of the Cowbird:—Mexican Ground Dove, Audubon's Oriole, Black-throated Sparrow, both Thrashers, and the Verdin, bringing the total list of victims of *M. ater* and its races up to 190.

101. ***Tangavarius aeneus involucratus.*** **RED-EYED COWBIRD.**—Fairly common. Many more males were seen than females. This bird is very different from the other Cowbirds in its courtship habits and also in its eggs. Inasmuch as no detailed description of the courting antics of the Red-eye has been written since the time of Merrill, some 45 years ago, it may be well to describe it here.

On May 6, a pair of Red-eyes was found in a field and the male watched displaying to the female. He ruffled up the feathers of his cape or mantle first and then all the feathers both on the upperparts and the underparts, brought his tail stiffly forward and under, arched his wings slightly, (not more than half as far as it was possible to arch them), and instead of bowing over forwards as does the male of the ordinary Cowbird, merely bent his head so that his bill was touching the feathers of his breast for its full extent. Then he suddenly bounced up and down four times, each bounce taking him about an inch from the ground. While bouncing up and down he gave a series of three very deep, guttural, yet bubbling sounds, and then a set of two short and one long squeaky, thin, high notes quite similar to the song of the ordinary Cowbird but wheezier, more throaty and shorter. Occasionally he did bow forward a little, but nothing like the extent to which *M. ater* does. In fact in its courtship this species is midway between the *Molothrus* group and the Rice Grackle (*Cassidix oryzivora*) of Central and South America. In its habit of bouncing up and down it resembles two Argentine species (*Molothrus bonariensis* and *Molothrus brevirostris*) more than it does *M. ater*.

Its eggs, unusual in color for a Cowbird's, pale blue without any spots, were found in nests of the following species:—Audubon's Oriole, Sennett's Hooded Oriole, and Texas Wren, while Camp informed me that this Cowbird also lays in nests of Gray-tailed Cardinals and from another party it was learned that their eggs have been found in nests of the Western Mockingbird and Sennett's Thrasher. Of these the following are new to the list of victims of the Red-eyed:—Western Mockingbird, Sennett's Thrasher, and Texas Wren. The last named nest was found by Dr. Cordier on May 6, and contained three eggs of the Red-eyed Cowbird and none of the Wren's. The Wren was incubating and the next day all three eggs hatched. Two days later the young were destroyed by a skunk. The total list of the victims of *Tangavarius aeneus* and its races now numbers 16. This bird is very partial to nests of the Orioles, at Brownsville to *Icterus cucullatus sennetti*.

102. ***Xanthocephalus xanthocephalus.*** **YELLOW-HEADED BLACK-BIRD.**—Several were seen with the Cowbirds and Grackles around the

cavalry stables at Fort Brown early in the month, but all were gone by the 10th of May, both sexes were noted.

103. *Agelaius phoeniceus richmondi*. VERA CRUZ RED-WING.—Red-wings, probably of this race were very common. They act and sing just like the northern ones but apparently never nest in the cat-tails or even in bushes or trees standing in the water. Some 15 nests were examined and all were in bushes or trees in dry locations and varied from within five feet of the ground to over twenty feet above it. In all his years of field work in this region Camp has never found a Red-wing's nest built over the water.

104. *Sturnella magna hoopesi*. RIO GRANDE MEADOWLARK.—Uncommon near Brownsville, but fairly common in a large moist piece of grassy prairie about 15 miles out towards Point Isabel. They were very shy and consequently little was learned of their habits. They fly like the ordinary form of this species, having the Starling-like gliding habit and also they have the buzzy rattling note of the typical subspecies.

105. *Icterus melanocephalus auduboni*. AUDUBON'S ORIOLE.—Fairly common. These Orioles are woodland birds, not much given to nesting in trees in open places as does the following species. Only two nests were found. One contained two eggs of the Oriole and one of the Red-eyed Cowbird, and the other was deserted and contained one egg of the Red-eyed Cowbird and one of the Dwarf Cowbird and none of the Oriole. The nest in this species is not penile.

106. *Icterus cucullatus sennetti*. SENNETT'S ORIOLE.—Very common, nesting almost entirely in the palms and bananas, close to houses at times; in fact they seem not to mind human presence at all. According to the stories the local boys tell, the male helps build the nest. Whether this is so or not, it certainly is true that the male does help to feed the young from the day they are hatched. The nests are sewn on to the under side of the palm or banana leaves and are much shallower than those of the Baltimore Oriole, but are deeper than the nests of the Orchard Oriole. Sixteen nests were found, one of which had an egg of *Molothrus ater obscurus* and two of the Oriole and three contained eggs of *Tangavirius a. involucratus*.

107. *Icterus spurius*. ORCHARD ORIOLE.—Uncommon. Only one seen.

108. *Icterus bullocki*. BULLOCK'S ORIOLE.—Uncommon. Only one seen.

109. *Megaquiscalus major macrourus*. GREAT-TAILED GRACKLE.—Abundant everywhere. These birds are very destructive to the large colonies of breeding birds in this part of Texas as they destroy countless numbers of eggs. In strong light the throats of the females look very yellowish, almost as yellow as the head of a female Yellow-head Blackbird. The notes are very harsh and suggest the sound of the crackling of twigs, agreeing in this respect with some of the big Oropendulas of South America. A great many nests, (35-40), were examined and in more than half were found dead young or even the old birds dead and partly decayed. What

caused this scourge among the Grackles could not be determined, but it was not exactly annoying to find that something was putting a check on the numbers of these nest-robbers and egg-thieves.

110. *Amphispiza bilineata bilineata*. BLACK-THROATED SPARROW.—Common. This is a bird of the open country, nesting in low, but very dense bushes. Its song is very reminiscent of that of the Song Sparrow, and is quite remarkable in its volume for the size of the bird. The Black-throated Sparrow is an early nester and, according to Camp is the commonest victim of the Dwarf Cowbird early in the season before many other birds are nesting. In spite of the frequency with which this bird is victimized it has never been recorded as a Molothrine victim. The western desert race *Amphispiza bilineata deserticola* is known to be parasitized, but this race was formerly not known to be affected by the Cowbird. Three nests were found, all empty.

111. *Arremonops rufivirgatus*. TEXAS SPARROW.—Common. These little greenish Sparrows are birds of the underbrush and are not easy to keep in sight. Their call-note is a smacking, somewhat explosive *tchip*. Five nests were found, all in prickly pear cacti. Of these, two nests contained two eggs each, one had three, and two had four apiece. The eggs are pure white without any markings, are rather frail for Sparrow eggs, being intermediate in strength between an ordinary Sparrow egg such as a Song Sparrow's egg and a Phoebe's egg.

112. *Cardinalis cardinalis canicaudus*. GRAY-TAILED CARDINAL.—Very common. The notes are similar to those of the northern Cardinal as are also the eggs and the nest. Three nests were found of which two contained eggs of the Dwarf Cowbird in addition to the rightful eggs.

113. *Passerina versicolor versicolor*. VARIED BUNTING.—Uncommon. Only one specimen was observed, a bird in beautiful plumage was seen feeding in the city dump at Brownsville on May 7.

114. *Passerina ciris*. PAINTED BUNTING.—Uncommon. Only one seen.

115. *Sporophila moreletti sharpei*. SHARPE'S SEEDEATER.—Uncommon. One of each sex seen, but not on the same date.

116. *Piranga hepatica*. HEPATIC TANAGER.—Rare. On May 8, Camp shot a bird of this species, the first he had ever found at Brownsville. The bird was badly shot and was in too poor condition to skin, so it was put in alcohol and is now in Camp's collection at Brownsville.

117. *Hirundo erythrogaster*. BARN SWALLOW.—Very numerous over the Laguna de la Madre on May 10 and quite common on Green Island the next two days. Not very many were seen on the mainland.

118. *Iridoprocne bicolor*. TREE SWALLOW.—The remarks on the preceding species apply to this one as well.

119. *Bombycilla cedrorum*. CEDAR WAXWING.—This bird occurred in some very large flocks, all of them probably not resident birds. Some of the flocks must have contained 150 to 200 birds, and I got seven with one shot.

120. *Vireo griseus micrus*. SMALL WHITE-EYED VIREO.—Common. This Vireo sings and acts just like the typical form in the northern states. Its nest is harder to find than most Vireos' because of the density of the foliage of the places in which it nests and also because the nests are placed towards the inside of the mesquite clumps instead of on out-hanging branches as are the nests of the Red-eyed Vireo. According to Camp this bird is very commonly parasitized by the Dwarf Cowbird. Only four nests were found, of which two were empty and the other two had three eggs each.

121. *Mniotilla varia*. BLACK AND WHITE WARBLER.—Several seen on Green Island, May 11 and 12. Two were noted on the mainland.

122. *Vermivora ruficapilla ruficapilla*. NASHVILLE WARBLER.—Noted in migration. Not seen after May 10.

123. *Vermivora peregrina*. TENNESSEE WARBLER.—Uncommon. Noted only on May 9, one bird.

124. *Dendroica aestiva aestiva*. YELLOW WARBLER.—Several seen on Green Island in a big flight of Warblers on May 12.

125. *Dendroica coronata*. MYRTLE WARBLER.—Two fine males seen on Green Island on May 12 were the only ones noted, except for a small flight on May 9.

126. *Dendroica magnolia*. MAGNOLIA WARBLER.—First seen May 7 when several were noted. Next and last seen May 12 on Green Island when only one was observed.

127. *Dendroica cerulea*. CERULEAN WARBLER.—Only one seen, on May 8.

128. *Dendroica pensylvanica*. CHESTNUT-SIDED WARBLER.—Several seen from May 7 to 12.

129. *Dendroica castanea*. BAY-BREASTED WARBLER.—Seen on Green Island on May 12.

130. *Dendroica striata*. BLACK-POLL WARBLER.—Several seen on Green Island on May 11 to 13. Also a few on the mainland on May 8.

131. *Dendroica fusca*. BLACKBURNIAN WARBLER.—Several noted on Green Island on May 12, and on the mainland on May 8.

132. *Dendroica virens*. BLACK-THROATED GREEN WARBLER.—Common on Green Island on May 11 to 13. Several noted near Brownsville during the first half of the month.

133. *Seiurus noveboracensis notabilis*. GRINNELL'S WATER THRUSH.—A few birds were noticed at the edge of a large resaca near Brownsville on May 27. One was collected and is now in the collection of R. D. Camp.

134. *Chamaethlypis poliocephala*. RIO GRANDE YELLOWTHROAT.—Two Yellowthroats, probably of this species, were seen on Green Island on May 12. The two birds, apparently a pair, stayed in one spot all day and acted as though they either had or planned to have a nest there. No notes were heard.

135. *Icteria virens longicauda*. LONG-TAILED CHAT.—Common,



1. YOUNG SENNETT'S WHITE-TAILED HAWKS IN NEST.
2. NEST OF MEXICAN GROUND DOVE.

similar in all its actions and notes to the typical form of this species in the northern states. It is very frequently victimized by the Dwarf Cowbird. Of four nests found, one contained two eggs of the owner and one of the Dwarf Cowbird, one contained three eggs of the Chat and one of the Cowbird, and the other two contained three Cowbird eggs apiece and none of the Chats.

136. *Wilsonia canadensis*. CANADA WARBLER.—A few seen during the second week of the month.

137. *Setophaga ruticilla*. REDSTART.—Several seen on Green Island on May 12, all in female plumage. One of these was collected by Camp and found to be a male. Inasmuch as males of this species are known to breed occasionally in immature plumage, it looks as though these birds were the last of the species to pass through in their northward migration. This is in keeping with the idea that old birds arrive before younger birds in their nesting grounds.

138. *Mimus polyglottos leucopterus*. WESTERN MOCKINGBIRD.—Extremely abundant. In the field this bird resembles in every respect the eastern form. Some forty-five nests were found, some in bushes or small trees, some in the prickly pears, and one was found on top of a fence post. This bird is now known to be victimized by the Red-eyed Cowbird. The abundance of its nests and the rather open places in which they are built makes this bird's relative freedom from the Cowbirds (both species) very puzzling. The solution probably lies in the pugnacious nature of the Mockingbird and its ability to drive off intruders from its nest.

139. *Dumetella carolinensis*. CATBIRD.—Two were seen on Green Island on May 12. This species is not known to breed here.

140. *Toxostoma longirostre sennetti*. SENNETT'S THRASHER.—Very common in the cactus and mesquite country. Its notes are similar to those of the Brown Thrasher but the alarm call seems to be slightly higher and sharper. Twenty-five nests were found with eggs or young. The dates for these nests are pretty evenly scattered through the month. Camp informed me that he had taken the egg of the Red-eyed Cowbird from a nest of this species in the past, and on May 18 he found a nest of this thrasher with two eggs of the owner and one of the Red-eyed Cowbird.

141. *Toxostoma curvirostre curvirostre*. CURVE-BILLED THRASHER.—Common, but locally (at Brownsville) not as common as the last. Three nests with eggs were found. This bird is more an inhabitant of open fields than the preceding and is locally called Field Thrasher.

142. *Heleodytes brunneicapillus couesi*. CACTUS WREN.—Common. This large wren is a rather early nester for fully-fledged young were seen flying around by May 15, and of ten nests found all but one had recently been vacated by the young birds. The other contained four eggs, all well incubated. In appearance this bird is quite unlike any of the others of its family in this country, but in its song and scolding chatter it at once proclaims its affiliations with Wrens in general.

143. *Thryothorus ludovicianus lomitensis*. LOMITA WREN.—

Rather uncommon. The few that were observed seemed similar to the ordinary Carolina Wren in every way. A nest with five eggs was found on May 8.

144. **Thryomanes bewickii cryptus.** TEXAS WREN.—Common. This is typically a bird of the prickly pear. It was never seen very far from this plant but one nest was found in a mesquite bush. This nest was unusual in several respects. In the first place it was obviously not built by the Wrens as it was entirely different from the regular type of structure this bird makes. Secondly when found by Dr. Cordier on May 6, it contained three eggs of the Red-eyed Cowbird and none of the Wren's although the female Wren was sitting close. The next day all three eggs hatched and two days later the nest and young were destroyed by a skunk. The damaged nest was then collected. This forms the first record of this bird being parasitized by the Red-eyed Cowbird.

145. **Baeolophus atricristatus sennetti.** SENNETT'S TITMOUSE.—Fairly common, nesting largely in holes in fence posts and stumps. Like the Cactus Wren, this bird is an early breeder and full grown young were seen on the wing by the middle of May.

146. **Auriparus flaviceps flaviceps.** VERDIN.—Fairly common. This little bird looks and acts more like a Kinglet than a Titmouse although it is classed with the latter. The only notes heard were little *tsip* sounds. Five nests were found, three of them empty, one with four eggs, and one with four eggs of the Verdin and one of the Dwarf Cowbird. The entrance to the last nest had been considerably enlarged, probably by the Cowbird when laying in the nest. The Verdin has never before been recorded as a victim of the Dwarf Cowbird (or of any Cowbird).

147. **Polioptila caerulea caerulea.** BLUE-GRAY GNATCATCHER.—Uncommon. Observed on only one occasion.

32 Garden Place,
Brooklyn, N. Y.

SOME NOTES ON THE BIRDS OF THE BRANCHPORT,
N. Y. REGION, 1923.

BY VERDI BURTCH.

Plate XXX.

Gavia stellata. RED-THROATED LOON.—I saw one of these birds in the winter plumage on the east branch of Lake Keuka, April 22, and another one in company with several Common Loons on the west branch near Branchport May 13. I have but one previous record of this Loon for this locality.

Sterna caspia imperator. COUES' CASPIAN TERN.—Two Caspian Terns were here on the lake the morning of May 13, but left soon and were

not seen again. No more were seen until June 29, when there were three out on the sand bar nearly all day. One of these was an immature bird with white through the center of its crown.

Sterna hirundo. COMMON TERN.—The Common Tern seems to increase in numbers with us each year. This year the first came April 26, ten of them. No more were seen until May 13, when three arrived and then every day their numbers increased. May 16 the flock must have numbered at least fifty and was the largest flock that I ever saw here and many were still here the 19th. None were seen afterwards. September 16, a single Common Tern was seen perched on a water-logged post out in the lake. It was there for an hour or more and is my first fall record of the Common Tern at Branchport.

Phalacrocorax dilophus. DOUBLE-CRESTED CORMORANT.—May 13, I was watching a Loon that was flying over the lake, when two large, nearly black birds came flying along behind it. They were about the same size as the Loon and their manner of flight was much the same but their wings were broader and their necks shorter. I felt sure that they were Double-crested Cormorants. An hour later I met Dr. Eaton who confirmed my opinion and told me that he had seen two of these Cormorants, a few days before in Seneca Lake at Geneva, N. Y.

October 18, a Double-crested Cormorant came up the lake from the south and lit in "the basin" and dived. Soon afterwards it flew past me and lit out in the lake. I saw it once more when it flew north.

Marila valisineria. CANVASBACK.—Canvasbacks have been rather rare at the Branchport end of Lake Keuka for the past several years so I was rather surprised when eleven of them dropped in here December 20. The next day another small flock came in and a gunner got eleven of them, but more kept coming, the gunners taking heavy toll as long as the season was open and for a few days after. January 21, there were more than 1000 Canvasbacks here.

The night of February 4, the end of the lake froze over, driving the Ducks down the lake about two miles to open water. A week later the lake was completely frozen over, except the channel through the bar. This channel was cut through the sand bar that separates the harbor from the lake proper many years ago and it never freezes over. The morning of February 13, about 250 Canvasbacks had gathered in this channel and I feared a repetition of the disaster of February, 1912, when many Canvasbacks died from starvation in this same opening (Bird-Lore, Vol. XX, p. 410), so I interested some farmers and sportsmen who brought me barley and buckwheat, and I procured a lot of the "tailings" consisting of broken grains, weed seeds etc., from the local grain elevator and the grist mill. Every morning I took about a bushel of this down and scattered it in the water. Before many days the Ducks were watching for me and when they saw me coming they would swim towards me, then away a little while I scattered the feed. In a few days I was able to get within 25 or 30 feet of them when they were crowding and diving for the feed and I got many excellent photographs of them. [Pl. XXX.]

February 10, I heard that a young lad had shot a Canvasback and that it had a band on its leg. I procured the band, sent it to the U. S. Biological Survey and learned that it had been placed on a Canvasback only five days before by Dr. A. A. Allen at Ithaca, N. Y. March 4, the weather turned warm, the ice became unsafe so I was forced to discontinue the feeding, but there were soon large areas of open water and the birds were able to take care of themselves. Canvasbacks were here in numbers continually up to April 8 and had all left April 10. May 4, I was wading in the marsh and flushed a pair of Canvasbacks, male and female, and thought they might remain to nest but they were not seen again.

Lobipes lobatus. NORTHERN PHALAROPE.—I saw a Northern Phalarope September 15. It was here several hours in the shallow water four to six feet from the shore and was very busy swimming, twisting and turning about and seemed to be picking a good meal from the surface of the water.

Gallinago delicata. WILSON'S SNIPE.—The lake was very low in September and October with the shore line some ten rods from the cat-tails leaving a large area of muddy shore. Two Wilson's Snipe were first noted August 19, and were seen daily at the edge of the cat-tails working in the soft mud. As the water receded they went out on the mud, in the open, with the Kildeers and Least Sandpipers. September 16, I caught one in one of my traps and banded it.

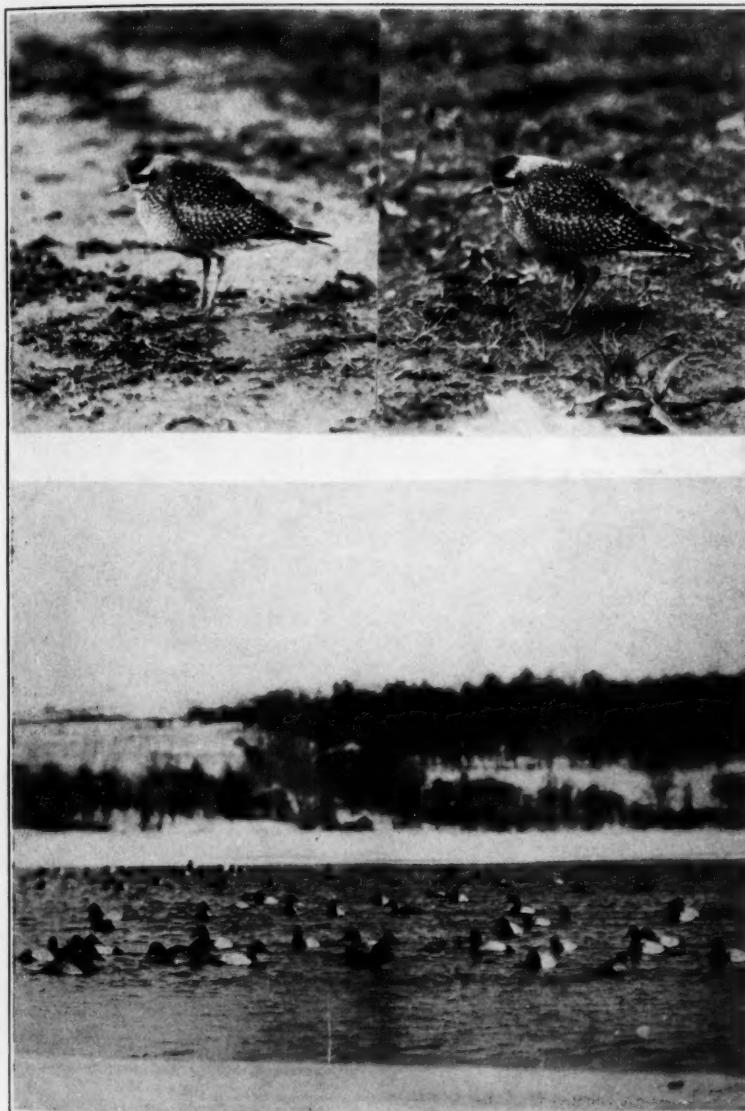
Many times in October and up to November 15, I saw two Snipe way out at the water's edge, at least ten rods from the cat-tails. This seemed unusual to me as I had never before seen a Snipe so far from cover. They were feeding in company with the Kildeers, Pectoral, Least and Semi-palmated Sandpipers and when I appeared at the edge of the mud would squat and freeze, then as I passed by would fly quickly to cover.

Micropalama himantopus. STILT SANDPIPER.—A Stilt Sandpiper came here August 9, and was here until the 12th. I saw it catch and with much effort swallow a small frog, after which it lost all interest in fishing. It walked off a few steps and stood on one foot, all humped up and with eyes closed; quite a contrast to the usual alert Sandpiper pose.

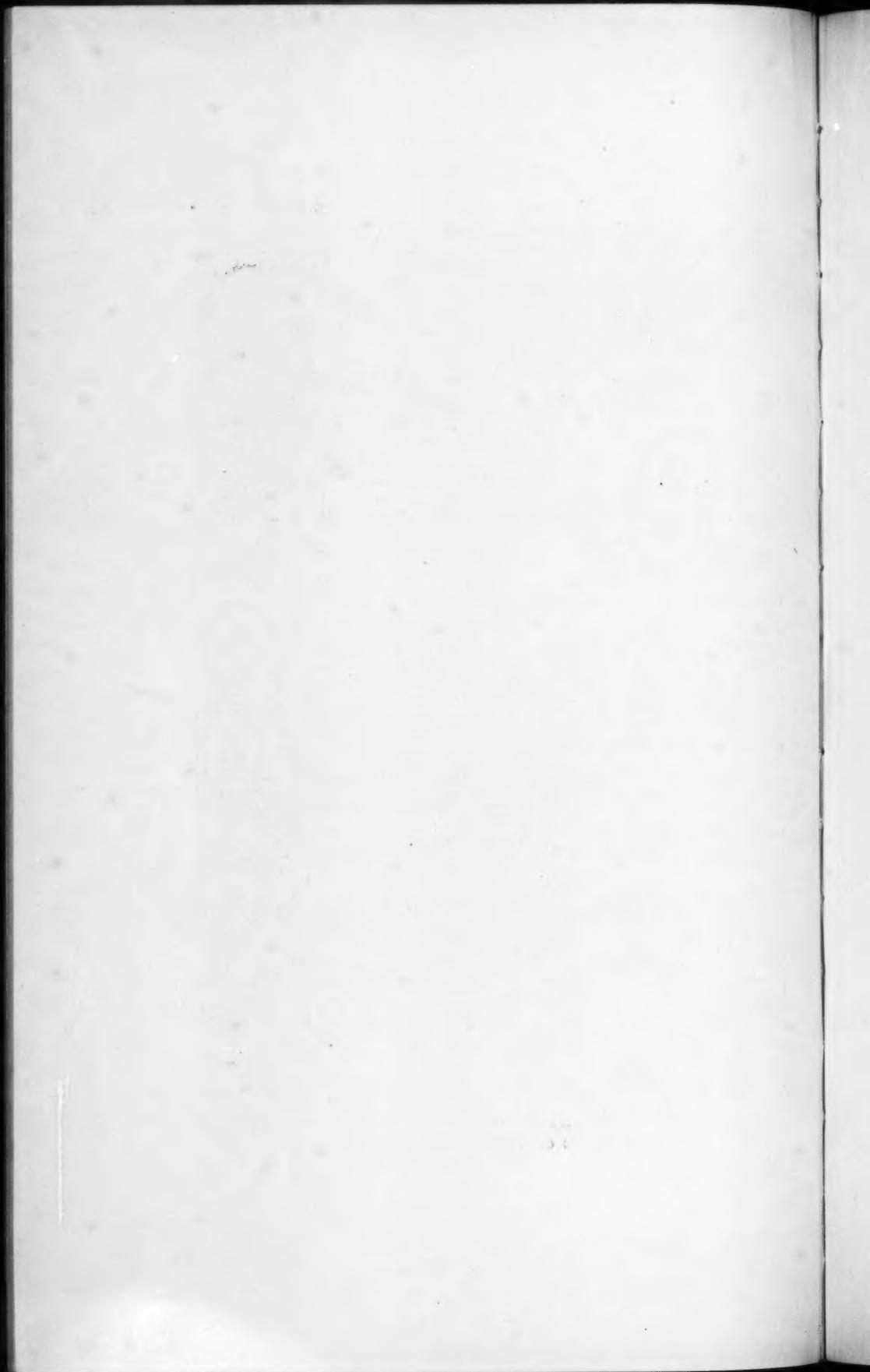
September 8, another one came in with a flock of eight Greater Yellow-legs during a shower and was here all the afternoon.

Crocethia alba. SANDERLING.—August 28, a small bunch of Sandpipers came in and lit near me. Among them were two that were new to me; they were small and much whiter than any Sandpiper that I had ever seen. On looking them up I found them to be Sanderlings. They were very active and were around all that day. The next day only one of them was seen and it was more quiet than those of the day before, standing around much of the time and it did not feed. It was still here September 1, and this same one or another one was seen September 8.

Pluvialis dominica dominica. GOLDEN PLOVER.—September 12, in the morning I was on the shore to look at my bird traps when I saw a Golden Plover run and hide behind a stump. I walked up to within a



1. TWO VIEWS OF A GOLDEN PLOVER.
2. CANVAS BACKS ON LAKE KEUKA, N. Y.



few feet of it when it ran along a little way. Following it I found that I could get real close to it each time before it would fly a little. So I went home and brought by camera and got several good pictures of it. It must have just arrived from a long journey for it acted tired. At first I thought that it might have been injured, however it could fly well and when pressed made one flight of about twelve rods. It was still here at 5.30 P. M., when it was more active. It was not seen next morning.

Loxia leucoptera. WHITE-WINGED CROSSBILL.—February 4, I came on a flock of about forty White-winged Crossbills in a bunch of hemlocks and maples on a gully bank. They were quite active, several at a time flying up and returning to the same tree, then suddenly all were up and away off down the gully.

After they had gone I walked on a few rods and found six American Crossbills (*Loxia curvirostra minor*), three males and three females working industriously on the cones of a nearby hemlock.

Dendroica castanea. BAY-BREASTED WARBLER.—Usually the Bay-breasted Warbler has been rather rare here during the spring migration but this year on May 20 there were hundreds of them in Potter Swamp. The trees were full of warblers of many species, mainly Bay-breasted, Black-throated Green, Chestnut-sided, Magnolia, Black-poll and Blackburnians. In all I recorded twenty-two species of Warblers as follows: Golden-winged, Nashville, Tennessee, Parula, Black-throated Blue, Myrtle, Magnolia, Caerulean, Chestnut-sided, Bay-breasted, Black-poll, Blackburnian, Black-throated Green, Ovenbird, Water-thrush, Louisiana Water-thrush, Northern Yellowthroat, Wilson's and Redstart.

Dendroica palmarum. PALM WARBLER.—May 6, I saw a Palm Warbler on the ground under some thick pussy willows at the edge of Potter Swamp and later in the day I found another one in some bushes along the creek where the water was nearly knee deep. This is the second time that I have recorded the Palm Warbler in this locality.

Geothlypis philadelphica. MOURNING WARBLER.—May 21, I caught two male Mourning Warblers in one of the Biological Survey type sparrow traps. Both birds were in the trap at the same time and there were three English Sparrows in the trap with them. The trap was set in the corner of a field about eight feet from the bushy bank of a brook and was baited with weed seeds and a few bread crumbs.

Branchport, N. Y.

NEW BIRDS FOR PORTO RICO.

BY STUART T. DANFORTH.

DURING a year's ornithological work in Porto Rico in 1923 and 1924, I obtained records of nine forms not hitherto listed in the Porto Rican avifauna. Five of these are North American migrants, three are forms of resident waterbirds not previously described, and one is probably of accidental occurrence.

1. *Gelochelidon nilotica*. GULL-BILLED TERN.—A few of these Terns, which do not seem to have been previously recorded from Porto Rico, stayed around Cartagena Lagoon practically all summer. I collected a female from a flock of nine on July 2, 1924.

2. *Phalacrocorax vigua mexicanus*. MEXICAN CORMORANT.—A small Cormorant, which appeared to be of this species, was observed at Cartagena Lagoon on October 17, 1924. No Cormorants have previously been listed from the island.

3. *Erisomatura allenii*.¹ sp. nov.

ALLEN'S RUDDY DUCK.

Char. sp. Wing and tail conspicuously shorter than *E. jamaicensis*; bill slightly narrower; tarsus decidedly longer; eclipse plumage, as such, absent.

Adult male, throughout the year: Upper part of the head, down to and under the eyes, and nape, deep black; chin and cheeks pure white; rest of the neck, upper back, scapulars, rump, upper tail coverts, sides and flanks dark mahogany red²; upper breast a deep glossy maroon; wing coverts and lower back fuscous-black, the wing coverts sometimes conspicuously marked with dark mahogany red; under tail coverts white; feathers of the rest of the lower parts fuscous tipped with silvery, (often rust stained); remiges above and rectrices fuscous-black; under wing-coverts, axillaries, and under sides of remiges brownish gray, (between mouse gray and hair brown of Ridgway), the axillaries edged and the under wing coverts broadly tipped with white; bill, in life, between sky blue and forget-me-not blue.

Adult female: Upper part of the head, down to and below the eyes, amber brown narrowly barred with black; an indistinct whitish stripe runs from the base of the bill almost to the nape; rest of upperparts black, indistinctly barred and flecked with tawny brown, though these markings

¹ Named for Dr. Arthur A. Allen, Professor of Ornithology at Cornell University.

² The color terminology employed is that of Ridgway's 'Color Standards and Nomenclature.'

vary in shade and in some specimens are almost chestnut; chin white; throat and neck hair brown, tipped with whitish; sides and flanks similar to the back; feathers of the lower parts fuscous tipped with silvery; wings fuscous-black, the secondaries and coverts with minute freckling of the same shade as the freckling of the back.

Immature: An unsexed immature bird collected for me by Dr. A. Alvarez is similar to the female but paler all around, and more strongly barred on the back, sides, and upper tail coverts, and particularly on the flanks. It is similar to the immature of *E. jamaicensis*, but the bars of the flanks are brownish instead of white.

MEASUREMENTS (IN MILLIMETERS):

	Culmen	Wing	Tarsus	Tail	Breadth of bill at widest part
♂, <i>E. allenii</i> , No. 33, P.R., Mar. 1	39	122	32	66	23
♂, " No. 31, " Mar. 1	41	137	34	77	22.5
♂, " No. 186, " Apr. 19	41.5	139	32	76	23
♂, " No. 189, " Jul. 19	39	138	32	78	22
♀, " No. 32, " Mar. 1	41	135	33	74	24
♀, " No. 34, " Mar. 1	42	mlt.	30.5	mlt.	24
♀, " No. 35, " Mar. 1	38	135	32	72	23.5
♀, " No. 185, " Apr. 12	41	138	30.5	77	21.5
Imm., " No. 184, " Apr. 12	39	133.5	32	58	22
Average of ♂ <i>E. allenii</i>	40.1	134	32.5	74.2	22.6
" " ♀ "	40.5	136.0	31.5	74.3	23.3
Average of 6 breeding ♂ <i>E. jamaicensis</i> (N. Am.)	40.7	148.5	28.8	83.5	23.3
Extremes of these	40-42.5	144-	28-30.5	79-88	20-24
		154			
Average of 4 breeding ♀ <i>E. jamaicensis</i> (N. Am.)	40.4	147.0	29.0	83.0	24.0
Extremes of these	39-42	146-	28-30	82-85	24-24
		148			

Type: From Cartagena Lagoon, P. R., No. 186, S. T. D. Coll., taken April 19, 1925, by L. H. Mendoza, (C. U. Coll. No. 2287).

Geographic Distribution: Island of Porto Rico. Records from Cartagena and Anegado Lagoons and Guayabal Reservoir.

Remarks: The principal differences which distinguish *E. allenii* from *E. jamaicensis* are the short wing and tail and the generally darker coloration.

These features are noticeable at a glance. The bill is slightly narrower and the tarsus decidedly longer. The factor which has influenced me more than any other, in deciding to describe this Duck as a new species rather than a subspecies, is the fact that the male either undergoes no eclipse plumage or, if he does, this plumage is the same as the breeding plumage, while the male *E. jamaicensis* spends at least half the year in an eclipse plumage which is similar to the female plumage. In Porto Rico males in the red plumage may be noted every month in the year. Males which are not fully adult show a few brown and black immature feathers among the red feathers of the back. Molting birds in March were molting from red into red.

I have not had the opportunity to examine specimens from Cuba or Jamaica, but as the North American form was originally described from Jamaica the Porto Rican form must be different from that. The Ruddy Duck appears to be extremely rare in Jamaica at present, and I have not been able to locate any specimens from there in the United States. Gosse's records (1847) are referable to the Masked Duck, (*Nomonyx dominicus*), and I find no record of any naturalist since then who has observed the Ruddy Duck in Jamaica. Specimens from Cuba should throw interesting light on the relationships of these Ducks, but apparently there are none in this country.

4. *Gallinula chloropus portoricensis*, subsp. nov.

PORTE RICO GALLINULE.

Mr. Outram Bangs, in his revision of the American forms of *G. chloropus*,¹ suggested that when a larger series of West Indian specimens were brought together it might be possible to further subdivide the species. Specimens from Porto Rico show constant differences from any of the other described subspecies, so I propose to separate the Porto Rican bird as *G. c. portoricensis*.

Chars. subsp. The tarsus averages slightly longer than the North American *G. c. cachinnans*, and shorter than *G. c. cerceris* of St. Lucia and Grenada. The frontal shield is conspicuously larger than in the North American bird. The color is much darker, the lower parts being a deeper gray (blackish mouse gray of Ridgway), and the back a darker shade of brown (similar to raw umber of Ridgway, but slightly darker). The brown on the back is also less extensively distributed, being confined mostly to the middle back.

¹ Bangs O. Proc. N. E. Zool. Club, V, 1915, pp. 93-99.

MEASUREMENTS (IN MILLIMETERS):

	Wing	Tail	Tarsus	Bill from Gape	Culmen with Frontal Shield	Width of Frontal Shield
♂, <i>G. c. portoricensis</i> , No. 17, P.R.	176	80	48	28.5	48	15
♀, <i>G. c. portoricensis</i> , No. 45, P.R.	170	72	52	27.5	46	13
♀, <i>G. c. portoricensis</i> , No. 56, P.R.	174	76	53	28	45	13
♂, <i>G. c. portoricensis</i> (Bangs) P.R.	173	68	51	30	—	—
Imm. ♀, AMNH No. 20369, P.R.	165	71	52	28	Undev.	Undev.
<i>G. c. cerceris</i> , St. Lucia (Bangs)	173-174	70-65	56-57	31-31	—	—
<i>G. c. cerceris</i> , Grenada, (AMNH No. 45639)	180	73	55	—	43	13
<i>G. c. cachinnans</i> , average of 17						
N. Am. breeding birds	174.1	73.0	48.7	28.0	42.2	12.1
Extremes of same	160-183	65-80	46-53	25-30	39-45.5	9-14

Type, from Cartagena Lagoon, P.R., No. 17, Coll. S. T. D., (C. U. Coll. No. 2288), ♂ adult, collected Jan. 14, 1924. by S. T. Danforth.

Geographic Distribution: Island of Porto Rico. Records from Cartagena, Anegada and Guánica Lagoons, Cabo Rojo Lighthouse, Aguadilla and Mayagüez.

Remarks: There is less brown on the back of every Porto Rican bird than on any North American bird in the large series of specimens in the Cornell University Museum and in the American Museum of Natural History. The Cuban birds approach the Porto Rican birds in this paucity of brown, but the tarsus is even longer than *G. c. portoricensis*, nearly approaching *G. c. cerceris* in this respect.

5. *Fulica caribaea* major, subsp. nov.

PORTO RICO COOT.

The breeding Coots of Porto Rico, instead of being *F. americana*, as has long been supposed, proved to be a subspecies of *F. caribaea*.

Chars. subsp.: Much larger in all respects than *F. c. caribaea*, including the frontal plate.

MEASUREMENTS (IN MILLIMETERS):

	Wing	Tail	Culmen with Frontal Shield	Depth of Bill at Base	Length of Frontal Plate	Width of Frontal Plate
♂, <i>F. c. major</i> , No. 134, P.R.	192	50	57	16	23.5	12
♂, " No. 133, "	190	51	55	16	25	12.5
♂, " " No. 16, "	195	51	57	16	23.5	14
♀, " " No. 141, "	191	56	57	15	27	13
Imm., <i>F. c. major</i> , No. 188, P.R.	Molt	51	52.5	16	20	11.5
<i>F. c. caribaea</i> , AMNH No. 26501 (Sombrero)	185	48	43.5	14	11	11
5 ♀, <i>F. c. caribaea</i> ¹	174.6	49	47	14.8	—	—
3 <i>F. c. caribaea</i> , ² Guadeloupe and St. John's					.7 to .9 inch	.35 to .50 inch

Type, from Cartagena Lagoon, P.R., ♂ adult, no. 16, S. T. D. Coll., (C. U. Coll. No. 2291), collected January 14, 1924, by S. T. Danforth.

Geographic Distribution: Island of Porto Rico. Records from Cartagena and Anegado Lagoons and Guayabal Reservoir.

Remarks: This form is larger than *F. c. caribaea* or than any of the forms of *F. americana*. It can easily be told from *F. americana* by the fact that the frontal shield is entirely white. The color is darker than in *F. a. americana*.

6. *Ereunetes mauri*. WESTERN SANDPIPER.—On August 26, 1924, at Cartagena Lagoon, I collected a female Western Sandpiper, from a flock of Semipalmated Sandpipers. It was in almost full summer plumage.

7. *Circus hudsonius*. MARSH HAWK.—A Marsh Hawk frequented Cartagena Lagoon from November 30 to December 27, 1923. Although it was not collected I observed it closely on several occasions. It appeared to be an immature bird. The upperparts were very dark brown with a white rump, while the underparts were rufous colored without any visible streaks.

8. *Melospiza lincolni lincolni*. LINCOLN'S SPARROW.—One was seen December 14, 1923, in some piles of thorny brush at La Plata. I observed it very clearly with 8x binoculars at a distance of less than 20 feet, so that there could be no mistaking its identity, unusual as the record may be. The broad cream-buff band across the breast, the fine streaks on breast and sides of belly, and head similar to that of the Song Sparrow, but streaked, were very clearly noted. It had a sharp but rather weak chip.

¹ Listed by Riley, J. H., Proc. Biol. Soc. Wash., XXIX, 1916, pp. 103-4.

² Ridgway, orig. description, Proc. U. S. N. M., VII, 1884, p. 358.

It was rather shy, and occasionally flitted from one brush pile to another, keeping quite well concealed the greater part of the time, but giving me several opportunities to obtain fine views of it. Unfortunately I had no gun with me at the time, and therefore could not collect it. I was perfectly familiar with the local race of the Grasshopper Sparrow, which is the only other Sparrow found on the island.

9. *Geothlypis trichas brachidactyla*. NORTHERN YELLOW-THROAT.—On April 18, 1924 I observed a brilliant male Yellow-throat at Desengaño. Although it was not collected it was observed at very close range in a pile of bamboo brush near a pool of water. I believe this is the first definite record of the occurrence of this species in Porto Rico. Dr. Wetmore¹ lists it as of uncertain status for Porto Rico, on the basis of rather vague statements of older writers.

In conclusion I wish to express my thanks to Dr. F. M. Chapman and Mr. W. de Witt Miller of the American Museum of Natural History for permission to examine the specimens in that museum, and to Mr. Miller for his critical examination of some of my specimens, and especially to Professor A. A. Allen, of Cornell University, for his helpful advice and guidance throughout my work in Porto Rico and since then.

*Laboratory of Ornithology,
Cornell University, Ithaca, N. Y.*

THE BIRDS OF THE DES MOINES RAPIDS.

BY W. E. PRAEGER.

THE Des Moines Rapids are no more and that fact is the chief excuse for publishing these old notes. Where the rapids used to be is now "Lake Keokuk" formed by the great Keokuk dam. The Rapids formed a unique feature in the course of the Mississippi, nothing like them occurring elsewhere between St. Paul and the Gulf. The present lake is almost as unique, few comparable stretches of deep, slow water are to be found in the whole length of the great river.

Ecologists certainly missed an opportunity when no careful survey of the biota of the old rapids was made. This could easily have been done especially as the river bottom was extensively bared during the building of the dam. The physical conditions were well known and weather and river changes had been recorded

¹ Wetmore, Alex., 1916, *Birds of Porto Rico*, P. R. Insular Experiment Station Bulletin, 15, p. 99.

for many years. It would have been most interesting to be able to record the changes in the biota that must have taken place with the creation of the lake.

The Des Moines Rapids "lie in a gorge cut in the Keokuk limestone, quite uniformly seven-eighths of a mile wide between bluffs, and twelve miles in length between Montrose and Keokuk. The river bed itself is generally three-fourths of a mile wide and the floor is remarkably uniform in elevation from shore to shore, so uniform as to be practically covered even at low water."

The fall in the twelve miles was given as 23.8 feet at highest water and 15.7 feet at lowest, but this was not uniform. For four and a half miles, as far as Nashville, it was less than a foot to the mile. At this point the government canal began and bordered the west side of the river to the foot of the rapids at Keokuk. In this stretch the slope was broken at low water by "chains" of more resistant rock, and here the river became more truly rapids. At high water the surface of the river might be unruffled and steamers could pass over the rapids and not use the canal. Broken water appeared when the river was low and even a log raft could not have come down in safety. The extreme range of the water level in 20 years was 12 feet at Nashville and 20.7 feet at Keokuk and the extremes of volume were given as 20,000 and 372,500 cubic feet per second.

It was my fortune to have my headquarters at Keokuk from 1883 to 1897 and during the later half of that period to live on the bluff overlooking the rapids. The river was under frequent observation though often only for a few minutes in a day owing to the demands of business. Never twice did the great river seem the same, its changes were fascinating, but it was the life upon it that especially attracted me. A field glass only enabled me to be sure of the birds on the Iowa side, but I was occasionally able to borrow a telescope and then, if the light were favorable, birds could be identified across the width of the river.

Often, especially during migration, the river valley would be full of life; the birds mostly on the water and drifting rapidly down stream. At the foot of the rapids the Keokuk and Hamilton bridge crosses the river and rather than go under it the birds would rise and fly up stream, sometimes for a few hundred yards, some-

times for several miles, only to be again carried down to this barrier. Thus there was often a congestion of birds, especially Ducks, towards the bottom of the rapids and the same individuals would repeatedly pass my point of observation.

The western bank of the rapids was parallel by the dyke of the government canal, now submerged. There was therefore no shore; the steep outer slope being of rough stone, with occasionally some bushes. The eastern bank was in its natural condition. Bottom lands, so characteristic of Mississippi scenery, were almost absent and the beach was usually narrow, rough and stony. About a mile and a quarter above the bridge on this side, Chaney Creek entered the river, and from here sandbars and low islands began and attained a considerable width before the bridge was reached.

Below the bridge a complex of islands, sloughs and sand bars stretched as far as Warsaw. In my day these islands were largely covered by a magnificent bottomland forest. Opposite Warsaw the Des Moines river joined the Mississippi and below this, in both Illinois and Missouri, the bottom land extended several miles from the river. These lands were liable to flood, and though the soil was so rich, had largely up to that time been neglected by the farmers so that much wild land remained. Here were lakes, ponds, sloughs, rivers, marshes, prairies, both wet and dry, and heavy and thin timber. These bottom-lands were wonderfully rich in bird life and much frequented by hunters in spring and fall.

To return to the rapids. The fluctuating depth of the water made frequent changes in the conditions, though I have never noticed any definite correlation between the depth of the water and the bird life on the surface. The birds of course avoided rough water and used exposed sand or rock for perching at low water. But in winter the conditions of the ice evidently influenced the bird fauna. Above the swift and shifting currents the ice, except in periods of steady and intense cold, frequently moved, piling itself into great ridges or leaving patches of open water. In times of low water and where the ice might touch the rocky floor, the changes were rapid and sudden. If the season were mild the river might not close all winter, but this was rare. A few extracts from my old notes may aid in picturing these conditions and the bird life associated with them.

January 4, 1891; "Showery, changeable, with few cold days and only one light snow. On the rapids Ice-Ducks (Goldeneyes) were common and a few Mallards were seen almost daily round the rock piles.

Geese were not seen till the 20th, but from that date several small flocks, aggregating about 100 birds, spent each night on the sand-bars between Chaney Creek and the bridge. They usually left the bars early but stayed on the river swimming up stream till full daylight when they rose and flew eastward."

Jan. 9, 1891; "Ice gorge on the rapids and river down to 2.4 below guage and in consequence the city was without water for a day."

(1890) The coldest spell of the winter was the first week of March; five below zero recorded. The river closed on the 6th, and opened on the 11th.

March 15, 1894; "Today saw on the market, shot on the rapids twelve species of ducks:—Mallard, Baldpate, Gadwall, Green-wing, Bluewing, Spoonbill, Sprigtail, Redhead, Bluebill, Black-jack, Iceduck, Butterball. There was one female Bluewing. This is two weeks earlier than usual. The only common migrant I have not seen as yet is the Wood Duck."

March 1894; "On the night of the 24th, it turned very cold with strong N. W. wind and on that and the two following nights there was about 20 degrees of frost while it was far below zero in the Dakotas. After the warm weather which had made the spring two to three weeks early the damage done to foliage was very great.

"With the cold wave the Ducks all came back in great numbers and were observed to fly high overhead in a southerly direction. Large bags were made by all hunters; two men killed ninety Ducks in one day near the mouth of Chaney Creek.

"On the 27th, it got warmer but the next morning the wind turned west with light snow and that night it was very cold again. The Ducks and Geese were thicker than ever; they were a drug on the markets, even in Chicago, and in some towns Mallards sold at three for 25 cents. *Dafila acuta* had mostly gone north and did not return with the first cold snap; on the 28th they were very abundant however. *Anas americana* and *Aythya americana* were the two commonest ducks, both unusually common."

November 7, 1892; "Up to this date Ducks had been very scarce, only a few small flocks had been seen. Yesterday it was wet with a strong south wind. At three this morning the wind turned west and it became rapidly cooler; the night was fine, cloudy, with a full moon. At daybreak the rapids were covered with Ducks, fully a thousand of many species right in front of our house where there had not been one the previous evening."

March 16, 1896; "Today Wooster brought in the result of three days shooting with a shoulder gun on the rapids. Three *Olor columbianus*, out of a flock of nine, 3 *Chen caerulescens*, one *Anser albifrons gambeli*, one *Branta canadensis*, 60 *Anas boschas*, 5 *Dafila acuta*, 10 *Anas carolinensis*. The weather had been cold with a good deal of small drift ice but not blowy or snowy."

The method of shooting on the rapids was to anchor the boat and let the birds drift down on it. Often the birds would not come near enough for a shot and chances were very uncertain. To collect the dead and wounded the anchor had to be slipped and after some vigorous rowing in the swift current the old position was regained. The boat used for this purpose was usually the flat-bottomed skiff. This is indeed the best type of boat for general river purposes if properly built, but badly designed skiffs were common which seemed to have made this interesting craft unpopular.

When watching the birds at long range through a telescope the size is often lost as there is nothing with which to compare the image of the bird. I found under these circumstances the light colors in the plumage to be the best guide to the species and often diagnostic. Most of our male ducks have light patches in the plumage that can be easily seen even when no other colors can be recognised, and whose position identifies the bird. I came to consider these marks "signal colors."

The question arises as to what birds should be considered characteristic of the rapids, or which species had any relationship to other members of the biota. It seems best to include those belonging to the first five orders in the A.O.U. 'Check-List'; the web-footed birds. Few others have any share in the ecology of the river. The shore birds, which migrate in numbers, are characteristic of the sandbars and sloughs and less common on the narrow

stony eastern shore of the rapids, while they are absent at all times from the "riprap" on the west bank. Apart from the "Natatores" I need only mention six birds that were at all conspicuous. The Coot or "Mudhen" often mingled with the Ducks in spring and fall. The Great Blue Heron frequented the eastern shore and occasionally the rock piles when the river was low. His smaller relative, the Green Heron, was a common summer resident and often seen. The Bald Eagle occurred at all seasons except midsummer. In winter they often lit on the ice or lingered around the "air-holes." They were on the lookout for fish or carrion. I only once saw a bird attacked and that was a badly wounded one which an Eagle took from me. The Osprey was common in April and September. Except one in early October, all my notes are in these two months. The Kingfisher was common along both sides of the river and doubtless took a considerable toll of the smaller fish.

I have usually quoted verbatim from my note-book; omissions and slight alterations for the sake of clarity were sometimes desirable. These broken records of bird life under conditions that are past may be of sufficient interest in themselves to justify publication. But it is to be hoped that in the future a study of the bird life of Lake Keokuk may be made by some fortunate observer when agreements with or changes from the following list can be recorded. Then my notes may become of much greater value than they can possibly be by themselves.

Colymbus auritus. HORNED GREBE.—It is strange I have so few records of this bird. I think I have occasionally seen it in the distance but never could be positive; perhaps the swift water was not suited to it. My only specimens were two shot some miles south of the rapids on October 23, 1895.

Podilymbus podiceps. HELL-DIVER; PIED-BILLED GREBE.—A common migrant and frequent summer resident. In spring and fall it was often to be seen on the rapids but in summer frequented the small ponds and marshes. I saw several on the rapids on July 2, 1898. Earliest date April 9 and latest November 5. It was most common in September and the first half of October.

Gavia immer clackson. LOON.—Frequent on the river in the late fall and never observed at any other season. Earliest noted October 24, and latest November 14. The birds were always in winter plumage except one shot on October 31, which showed traces of the summer condition; this was an exceptionally large bird, but it, and five others whose measure-

ments I have preserved, were within the limits of "elasson." One obtained on the rapids had in its stomach eleven fish from two and a half to six inches long. There is frequently gravel in the stomachs, though what the use of this may be to a fish-eating bird is hard to say. On July 4, 1889 a fine specimen in full summer plumage was captured alive at the Goose Ponds in Clark Co., Mo. It was chased into the reeds and there taken. No other bird was seen.

Stercorarius parasiticus. PARASITIC JAEGER.—One that had been shot opposite the city was brought to me on October 6, 1896. This is the only record. The skin is now in the museum of the University of Iowa.

Larus argentatus. HERRING GULL.—Common in early spring and late fall and a few seen through the winter. My earliest date for migrating birds is February 9, 1896, when they were common, but other years they might not be observed till March was well advanced. All my fall records are between September 14 and October 11. When the river was ice bound save for a few patches of dark water in the white snow, I have seen large gulls, probably of this species, around these "air holes," usually solitary birds, facing the cold and want.

Larus delawarensis. RING-BILLED GULL.—My positive records of this bird are very few, perhaps from the difficulty of distinguishing it from the more common Herring Gull. I have notes of its occurrence on April 4 and 12 and October 24.

Larus franklini. FRANKLIN'S GULL.—An irregular migrant. I have very few notes of this bird on the rapids. One I examined was shot on October 7, 1888. I have this note for November 17 and 18, 1891:—"A very severe cold snap came with great suddenness and the river was full of floating ice. Many boats and rafts were caught. Small Gulls (probably *L. franklini*) became very abundant on the river."

I have no records of Bonaparte's Gull though it probably occurs.

Sterna caspia imperator. COUES' CASPIAN TERN.—I have no note of this species in the spring. All my records are between September 9 and October 15. Five different autumns I have seen them on the upper bars near the mouth of Chaney Creek. Both old and young birds were usually present. In 1891 I have the following note:—"On September 19, a small compact flock passed flying south; on the 20th, a few were seen on the river, on the 21st, fifteen were together on the edge of the bar, some on the sand others in the shallow water."

"September 9, 1894. Very warm; in the afternoon watched several Caspian Terns flying over the shallows opposite our house. A boy appeared with a gun and shot several, for they were very tame, and let them float down stream. The terns remained till the afternoon of the 11th. They mostly rested in the shallow water and not on the sand."

On another occasion I note; "they kept calling loudly, their note is a harsh 'kwa-ah' or 'kwaw,' but they frequently give a loud sharp whistle."

Sterna forsteri. FORSTER'S TERN.—Occasional on migration. Two or three Terns stayed about the bridge for the first half of May 1888, and

one collected on the 12th made the species certain. On September 14, 1890, I note them as common. The common Tern may occur but I have never identified one.

Sterna antillarum. LEAST TERN.—I never saw it on the rapids. There are skins without records in local collections and they have been seen on sand-bars nearby in summer.

Chlidonias nigra surinamensis. BLACK TERN.—All records are in late spring and summer. The earliest is May 11, and often not seen till the middle of June; irregular in their appearance, common on August 4, 1898, and on July 20, 1898. On May 16 and 17, 1890:—"very abundant, the river was high and a quantity of debris was coming down stream; the Terns were perched on logs and other floating objects."

Phalacrocorax auritus auritus. DOUBLE-CRESTED CORMORANT.—An abundant migrant in April and October. Notes run from April 5-12, and from August 29 to October 27.

October 6, 1891: "After a spell of warm weather the wind turned N. W. with wind and rain and in the evening 33 degrees with snow. Oct. 7—Slightly warmer. Cormorants very abundant in the river; on the rock piles, on sand-bars, in the shallows, and swimming. The lower birds kept rising and flying to the head of the flock as it drifted down. At noon fully 200 had congregated on the third rock pile." April 5, 1885:—"Three Cormorants passed overhead; one of them kept uttering a note consisting of three short notes repeated in quick succession. This is the only time I ever heard a sound from a Cormorant."

Oct. 6, 1896:—"A Cormorant was brought to me alive. It had flown into a tree close to an electric light and, apparently quite blinded, was captured easily. There was a large migratory movement at the time."

April 27:—"Rowing in the sloughs; a flock of between 60 and 80 Cormorants passed over flying northwards in a single curved line."

Though these birds breed in central Illinois I have never seen them in the summer on the Mississippi. On a trip to St. Paul and back by the river between May 23 and 31, 1896, I did not see a Cormorant.

Pelecanus erythrorhynchos. WHITE PELICAN.—This glorious bird was a regular migrant. Noted in spring from April 11 to May 16, and in the fall from July 27 to October 4.

My earliest note for the Fall is July 27, 1893:—"No break in the heat and drought; a flock of Pelicans passed down the river this evening."

September 3:—"When two miles east of the river, a flock of about 500 Pelicans passed over flying west. They were in a network of lines across the sky with a long tail stretching out behind. It was curious to see how each bird followed every movement of the bird in front, either sideways or up and down." Another note says: "It was noticeable how the leader settled the mode of flight, whether flapping or sailing, each bird following suit, so that this passed slowly and regularly down the line; this probably was to maintain the same elevation."

September 14, 1885: "A flock of about 500 Pelicans passed over the city

this evening flying due south. They were flying in lines making a perfect network on the sky. The sun had just set and there was a strong red light from the west; as the birds' wings fell and rose their bodies looked black or shining rosy white. The sky was clear dark blue and the whole effect very curious and beautiful."

Mergus americanus. *Goosander*.—Of regular occurrence on migration in small numbers. In spring from Feb. 24 to April 29 and in Autumn from Aug. 6 to Nov. 16.

February 24, 1895:—"Warm and clear but no migration as yet, and ice covers the river. In the afternoon watched through a telescope the Ice Ducks in the air-holes on the rapids. Among them was a pair of Mergansers; they were expert divers and very quick under water but did not remain long below."

This bird was sometimes called "Shelldrake," but usually all Ducks of the genus were simply called "Fishducks."

Mergus serrator. *RED-BREASTED MERGANSER*. A rare migrant.—Probably seen on the rapids but females could not be distinguished from the preceding species and I never saw an adult male. The only time I ever had specimens in my hand was on February 14, 1890, when two females were shot.

Lophodytes cucullatus. *HOODED MERGANSER*.—Common as a migrant and occasional in summer; probably breeds. My earliest note is March 15, and they were common through April. In May I have several notes of flocks on the rapids, the birds usually in compact bunches of from twelve to twenty-five birds and apparently not paired.

July 11, 1894:—"M. Meigs brought me two Ducks killed with one barrel while flying over the canal. They were young *L. cucullatus*."

June 16, 1896:—"This evening there was a flock of 30 *L. cucullatus* on the rapids, apparently all young birds. Two other small Ducks were with them, probably *Q. discors*. July 1, 1897, A bunch of six young *L. cucullatus* on the rapids."

This bird seems to have no specific local name except rarely "Hammer-head." When the crest is depressed the reason is apparent. The crest is rarely raised, only at times of sexual excitement. I have few notes of their food; one taken in November had a fish four inches long in its stomach.

After the above note of July 11, I have not a single record till Oct. 28. They are often very abundant about the second week of November and my latest note is dated December 14.

Anas platyrhynchos. *MALLARD*.—Abundant migrant and rare winter resident. Most common in the last half of March and last half of October. Latest date in the spring May 20, and first in the fall September 5.

December 1890:—"A flock of Mallards were frequently seen on the rapids, usually on a stone pile or swimming near it."

The Mallard is usually in small flocks and in April is often paired. On March 5, 1896 a hybrid between the Mallard and Pintail was brought to

me; it had been shot on the rapids and was a male and a very beautiful bird.

Anas rubripes. BLACK DUCK.—Very rare, never seen on the rapids. The bird seems to be known to local sportsmen and it was said to be common on the Mississippi further south. The only one I ever saw to be sure of was purchased at a store on February 29, 1896. Its large size (wing 10.9) and tarsus and feet bright orange would seem to place it in the red-legged variety.

Chaulelasmus streperus. GADWALL.—A fairly common migrant but never abundant. It probably breeds in the vicinity. My own notes run from March 10 to May 1 and from October 20 to November 21. The bulk comes rather late, it is usually common during the second week in April but is scarce in the fall.

April 29, 1890: "A. strepera on the rapids in some numbers. The first I have seen anywhere this spring."

Marila americana. BALDPATE.—A migrant of irregular occurrence. Earliest date March 4, and usually common the last week of that month; scarce in April but I have notes of its occurrence in May. A solitary male on the rapids on May 21, 1900 is the latest date. In the fall it has occurred from October 14 to November 21, but is not common. The great flight of this species on March 27, 1894, has already been mentioned.

Nettion carolinense. GREEN-WINGED TEAL.—This is a cold weather Duck. Common in early spring and late fall and occasional in winter. Usually abundant in the last half of March and from October 10 to November 10. My earliest date is October 1 and latest April 1.

They were often common on the rapids. On March 30, 1890 I note: "Greenwings—the most abundant Duck for three days past; one flock had about one hundred birds feeding busily off the surface of the river."

During the spring of 1895 I did not see a single Greenwing anywhere; temperatures were normal but very dry and all waters low.

Querquedula discors. BLUE-WINGED TEAL.—This warm weather Duck usually arrived about April 1, but I have one record of one shot on March 15. It was perhaps most abundant the third week of April but left the river rather abruptly so that I have not a single May record. It bred in the neighbourhood, and I saw a pair at the Goosepond on June 6, 1893. On June 16, 1896, a pair on the rapids was "perhaps *A. discors*." Young have been reported in July but I have not a single record for May or August. In the fall they were most common during the first half of October. Earliest date September 4 and latest November 8.

Perhaps our best Duck for the table.

Spatula clypeata. SHOVELLER, SPOONBILL.—A migrant and probably bred in the vicinity. Earliest note for the rapids March 16, and latest April 26. The bulk comes after the majority of the Ducks and it was most frequent in mid-April. In the fall not common, but occurring from October 14 to November 15. They probably bred at the Goosepools in Clark Co., Mo. I have a note of three males there on June 6 and others

have seen them in the summer. This Duck prefers sheltered ponds and is scarce on the river. Yet I have seen it common as on April 18, "in pairs and small flocks" and on March 31, when I watched several from the bridge that were remarkably tame. In April 1893 they were exceptionally common and during the second week outnumbered all other Ducks on the market. On the 23rd of this month I found a flock of thirty birds on a small temporary pond in the Des Moines bottoms; they were mostly males and as they flew they chattered continually in low deep notes.

Dafila acuta. SPRIGTAIL, PINTAIL.—An abundant migrant; the first to arrive in numbers in the Spring and the first to pass northward. I have only one winter record, a male on January 9. But if the weather be open, migrants may arrive in numbers in the last half of February: my earliest date is the 13th. Usually they were not common till March and are often abundant during the latter half, but all pass by the end of the month so that I have only two records for April. In the fall they occur from October 1 to November 8; they may not be as abundant as in the spring.

The following note though not referring to the rapids seems worth giving, Old Monroe, Mo., March 6, 1886:—"The Ducks we saw were nearly all Sprigtails. I saw them to great advantage and admired their graceful form while floating and their rapid, rushing flight. When descending they just quiver their wings while the usual rush of their wings becomes a perfect scream. They have two notes, a short sharp whistle and a kind of laugh. The flock consisted of male birds; scarcely a female was seen. The great return migration of this Duck on March 27, 1894 has already been described.

Aix sponsa. WOOD DUCK.—A fairly common migrant and probably bred. On the Rapids I have seen it between March 17 and May 18, and from October 4 to November 19, never in any numbers though most common about April 1. This is a "wood duck" and is often met with in the sloughs and about small ponds. I have seen it in June.

Marila americana. REDHEAD.—A regular migrant but never abundant. Common from the middle to the end of March, the extreme dates being March 1 and April 14. In the fall they were scarce but have occurred from October 4 to November 10. An unusual date was May 1, 1890 when a pair was seen on the rapids.

Marila valisineria. CANVASBACK.—The first Canvasback I ever saw was on March 27, 1888 when one was on the market. Another turned up a few days later shot on the rapids and was considered a rarity. On April 8 they were reported plentiful at Lima Lake, twenty miles south. The following year occurs a note under March 17—"Canvasback are now fairly common, the hunters say they were never seen here till last spring."

From that year on they were noted every spring between March 7 and April 8 but were rare in the fall, earliest and latest dates being October 4 and November 10.

March 19, 1891:—"First great flight of Ducks on the rapids; many of the common species and with them a good number of Canvasback."

March 12, 1892:—"Canvasback first seen on the rapids,—a flock of thirty."

Marila marila. GREATER SCAUP, BIG BLUEBILL.—All the books and other available information led me to expect this bird would be common. In my earlier notes I mention seeing it on the rapids, as for instance March 30, 1890 among the other Ducks: "*A. marila*, *A. affinis* and *A. collaris* abundant in moderately sized flocks, these species usually mixed." But I never had a bird in my hand and as such records as the above are questionable I doubt if it occurs. Perhaps it once was found but has now disappeared from this region.

Marila affinis. BLUEBILL.—An abundant migrant and probably bred. Earliest date February 23, but never common till March 15, then often abundant till April 1, regular in April and occurring in May, and flocks seen on June 11 and July 4. Here comes a blank till October 13. Abundant from October 28 till November 12. After that date only a single record on the 27th of the latter month.

March 31, 1889:—"In the afternoon the rapids were covered with Ducks; from the canal wall all I could see were Bluebills. They were feeding busily off the surface probably on what had been washed down by the heavy rain of the previous night; the water was very muddy."

March 20, 1890:—"Ducks abundant. As seen through a telescope they were all Blackjacks and Bluebills."

1893:—"Very abundant on the rapids during the first week of April."

March 1896:—"Mallard, Greenwings, Sprigtails and Blackjack were at times common, all other Ducks rare. Bluebills seemed to be entirely absent."

A few were seen later in the Spring.

October 28, 1890:—"Five degrees of frost this morning. Large rafts of Ducks were on the rapids apparently all being *A. affinis*. The first time I have noticed this species this fall."

June 25, 1896:—"It was reported to me that an old bird and three partly grown young were killed in the canal a few miles above the city. In July 1897, an old one with a brood of young was seen on one of the Clark Co. ponds."

Marila collaris. BLACKJACK, RING-NECKED DUCK.—Usually abundant migrant sometimes in large flocks. The times of migration coincide with that of the Bluebill but are more sharply defined and it is never seen in Summer. Earliest a pair on February 5 then none till the 23rd. Common from March 15 to April 5 and none later. In the fall the first noted was on October 1 and common from October 30 to November 12, after that not a single record.

The "full face" view of the Drake is very peculiar but the colors begin to fade immediately after death and it has been inaccurately described in recent works. The black tip forms the center of the picture bounded above by a white band. Then bluish-gray and lastly a ring of white, this being completed below by the triangular patch of white feathers. The yellow

eyes in the large glossy black head complete the weird picture. Soon after death the white becomes bluish and the blue-gray a dull black. The females vary greatly in tint of plumage, sometimes giving the effect of a grayish and sometimes of a brownish bird.

Glaucionetta clangula americana. ICE-DUCK, GOLDENEYE.—The only Duck that was regular throughout the winter. Earliest record November 11, and latest April 10. There were always a few in the "air-holes" on the rapids where they could be seen diving repeatedly or flying up stream close to the surface. The water in these open spaces was usually very swift and it is hard to see how they avoided being carried under the ice. On February 13, 1892, I skinned two shot at an air-hole. The stomachs were well filled with mollusks, both bivalve and univalve, crayfish, fragments of insects and their larva, and gravel. The gizzard of the male was fully three times as big as that of the female.

These birds do not go in flocks; even when there are many in a single airhole they act individually. On one occasion I saw over a hundred crowded together by moving ice till, as the floes joined, they all took wing together.

Glaucionetta islandica.—I have a note of a female that I found on the market on March 27, 1888. I do not have the skin now, and, though I remember using the greatest care in identification, I am not sure that with the books then available I might not have been mistaken.

Charitonetta albeola. BUTTERBALL, BUFFLE-HEAD.—A migrant; common in the last half of March and at other times rather scarce. In the spring noted from February 2 to April 8, and in the fall scattered notes between November 8 and November 27.

March 30, 1890:—"Butterballs common on the rapids. One I watched diving continuously kept under about 30 seconds each time.

1893:—"The spring has been marked by a total absence of *C. albeola*, I did not see a single one anywhere and other hunters noticed the same thing. They were here in the usual numbers last fall and I heard of one being shot out of a flock of four in December."

This Duck, though a diver, is often met with in the sloughs and small ponds. The inviting name "butterball" enabled the grocers to pass off a poorly flavored Duck as very choice.

Clangula hyemalis. OLD-SQUAW.—My only record is of four young birds on the market with thirteen other species of Ducks all shot on the rapids on November 7 and 8, 1892. "On the evening of the 6th no Ducks were in sight, wind south. At 3 A. M. on the 7th wind turned west and it became cooler. At daybreak the rapids were covered with Ducks."

Somateria spectabilis. KING EIDER.—On November 10, 1894 I happened to meet a boy who was proudly carrying a Duck he had shot opposite the city. It was a young male King Eider. The skin is now in the museum of the University of Iowa.

Oidemia americana. BLACK SCOTER.—One purchased on the market, on October 31, 1894; the only record.

Oidemia deglandi. WHITE-WINGED SCOTER.—One was shot on the rapids on October 26, 1894; the only record.

Oidemia perspicillata. SURF SCOTER.—I have two records. Both of the birds turned up in the grocery stores and were probably from the rapids; the dates are October 20, 1895 and October 22, 1896.

Erismatura jamicensis. RUDDY DUCK.—A migrant in small numbers, more frequently seen in the Fall. Notes run from March 26 to May 9, and from October 15 to November 8.

October 28, 1888:—"A dozen Ducks shot on the rapids were all *Erismatura rubida*." May 11, 1890: "In the evening—a pair of Ruddy Ducks: through the telescope the white face and dark red of the male were very conspicuous. They did not hold their tails up as described by authors but floated low in the water. Going down with great ease they held their own against the current better than any Ducks I have seen, keeping their position when below and only losing a little when on the surface." I never saw one with the tail up and spread as in most pictures.

Chen hyperboreus hyperboreus. LESSER SNOW GOOSE, WHITE BRANT.—A rare migrant.

November 2, 1892: "No Ducks yet. Wet and cool. In the morning heard Geese calling, but with a sharper and shorter note than Canadas. Saw the flock through the mist flying south. One of them turned its back to me for a moment and I distinctly saw the white back and black tips of the Snow Goose. Probably the others were this species; they certainly were not Canadas."

March 30, 1894:—"Hunters report a flock of White Brants on the rapids." April 4, "A White Brant was shot, taken to Hamilton, plucked, and eaten."

March 14, 1886:—"From the bluffs saw a flock of about 20 White Geese."

Chen caerulescens. BLUE GOOSE.—An occasional migrant in the latter half of March; never seen in the Fall. My first specimen of this rare Goose was one obtained on the market March 18, 1893, "full of corn to the mouth, condition rather poor but good eating." At noon the same day I saw a flock in the distance on the rapids.

March 19, 1893:—"Sunday, a beautiful, calm, clear, cool day; river comparatively free from ice. Fewer Ducks than for some days past but still fairly numerous with Geese and Herring Gulls. Much interested in watching the flock of Blue Geese I had seen the previous day. They drifted down about once an hour all day. Thirty-nine birds in the flock, all perfectly typical. They were too wild for the boats to get a shot. They preferred floating down on ice to being in the water. They rose more easily than Canadas and settled more quickly without preliminary circling. They were careless of formation on the wing and individuals were continually changing places. They did not fly nearly as fast as Ducks but were not trying, as birds could leave the rear and pass to the front of the flock. On the wing looked like a dark bird with four light patches,—head, half of wings, and rump. Voice weaker and shorter than a Canadas, varied

occasionally to conversational tones and rarely a loud sharp call. Swimming they had shoulders down and tail up like a Speckle-belly and unlike a Canada."

One shot on the rapids on March 30, 1894, and two on March 16, 1896 complete my records. Perhaps the following note may be included though not of the rapids as opportunities of seeing this Goose are rare. "Urbana, Illinois, March 23, 1899. This afternoon a great flock of Geese in a network of lines across the sky passed over flying north. They had the call of Brants, short and sharp. Two of them were white but all the others grey and in spite of the height, the white heads and necks shone out clearly. Except for the two Snow Geese they were probably all *Chen coerulescens*. There may have been 100 of them.

Anser albifrons gambeli. SPECKLE-BELLY, WHITE-FRONTED GOOSE.—Occasional in both spring and fall from March 9 to April 17, and from September 20 to October 14. These dates would indicate that it was a warm weather Goose.

March 19, 1891:—"First great flight of Ducks and among them a flock of Speckle-bellies."

October 14:—"Two flocks of Speckle-bellies flew south today."

Branta canadensis canadensis. CANADA GOOSE, HONKER. A common migrant and in small numbers in winter. First seen from September 27 to October 20, and last from March 21 to April 17. A solitary bird was seen on May 3, perhaps a cripple.

This splendid bird is the "Goose," all other members of the Anserinae being known as "Brants." They vary greatly in size and I have measured specimens that might have been either the type of Hutchin's Goose though I have never seen an undoubted specimen of the latter.

For weeks together Geese would spend the night along the sand bars between Chaney Creek and the bridge, standing in the shallow water rather than on the sand and leaving with much noise just at sun-up. On wet or windy mornings they would leave later. In colder weather the edge of the ice would be their sleeping quarters. By day they were less often seen on the rapids but occasionally would frequent the rock piles or swim in the backwaters. Cold matters little to them if the ground is bare but snow covers their feeding grounds on the fields and prairies.

Cygnus columbianus. WHISTLING SWAN.—A scarce migrant, noted from March 9 to April 19 and on November 7 and 8. I have nothing on the habits of this species. The largest flock I have seen was twenty birds at Lima Lake. Only three times have I seen it on the rapids. A flock of five on November 7 and 8, 1890; of seven on March 18, 1893, and of nine on March 16, 1896. Three birds were shot from this flock and identified by myself.

It is the fashion among Duck hunters to claim all Swans are Trumpeter Swans unless proved to the contrary. I never saw a Trumpeter though I have examined several fresh and mounted Swans.

*Kalamazoo College,
Kalamazoo, Mich.*

GENERAL NOTES.

Double-crested Cormorant in the Connecticut Valley.—While watching one or two Greater Yellow-legs at the Ashley Ponds reservoir at Holyoke, Mass. on the afternoon of May 20, 1925, we discovered a bird near shore, swimming in the water. At a distance it appeared to be a Loon but, by taking advantage of the diving intervals, we gradually approached within fifteen or twenty yards and with the binoculars identified it as a Double-crested Cormorant (*Phalacrocorax a. auritus*).

The diving intervals and the distance traversed were shorter than usually performed by the Loon. After coming to the surface once or twice the Cormorant raised the wings and body above the water revealing black or brown-gray underparts. The head lacked the double crest, characteristic of the breeding plumage.

When the bird finally flew the neck was drawn out to full length and the webbed feet protruded behind. It presented the appearance of a small Goose. After taking one or two turns, it disappeared in a northerly direction heading for Mt. Tom.

Cormorants use the Connecticut Valley but casually. Edward O. Damon records two killed on the Hockanum meadows near Northampton in the fall of the year during the eighties. They were first observed on an old elm stub near the river and were subsequently mounted by the man who shot them.—AARON C. BAGG, 70 Fairfield Ave., Holyoke, Mass.

The Man-o'-war-bird in South Carolina.—On May 25, 1925, I was informed by a friend, Mr. Alex Mikell, of this city, that he has seen a Man-o'-war-bird (*Fregata aquila*), the previous day, at the entrance to Charleston Harbor. Naturally, I was much interested in hearing this as the occurrence of this species as far north as South Carolina is purely accidental.

Mr. Mikell stated that he was fishing from the south jetty, which lies a couple of miles beyond Fort Sumter. The jetty is built of rock, and keeps the channel open between the bar and the harbor, and lies in the ocean, two or three miles from Sullivan's Island, the nearest land. The bird when first seen was some distance away, but even then the great expanse of wing could be plainly noted. Before very long its course brought it almost directly over the jetty, and every detail was plainly visible to Mr. Mikell.

He at once recognized the bird as a Frigate Bird, having seen numbers off the Florida coast, and also off the coast of southern California.

As we were talking about it, we were joined by Mr. Felix Chisolm, and it transpired that he had seen the same bird (supposedly) on Saturday, May 23, off the beach at Folly Island, another barrier island lying a few miles to the southward. Mr. Chisolm is not very familiar with birds, but

at once realized that he had never seen a bird like this before. He described it to me in detail, and I have no doubt whatsoever but that the bird was a Man-o-war or Frigate Bird.

I made the attempt to see it myself, going out in a launch on Wednesday, the 27th, but we had had a strong north wind on Tuesday, and there was no sign of the bird.

On the afternoon of June 2, I made a trip to Folly Island rather late in the day, simply for a pleasure ride. Nine days had elapsed since the bird was last seen, and the strong north wind had blown itself out some days previously. I had no sooner set foot on the ocean beach, which is reached by motor car, than I saw a magnificent specimen of *Fregata aquila*, circling and dipping over the surf.

My pleasure at seeing the bird can well be imagined. It seemed in perfect health, and pursued the most leisurely tactics, simply wheeling and soaring over the breakers at no great height. We watched it for some time, until its course took it down the beach, and across the inlet which separates Folly from Kiawah Island. The direction of its course was about E.S.E. and it seemed to be in no hurry. There is no accounting for the evident fact that the bird has taken up its temporary abode with us. There is a large colony of Royal Terns on a bank, to the seaward of Kiawah Is. and it may be that the Frigate Bird is levying toll of the Terns for its meals. It has no end of servants to fish for it, at any rate.

I append the following dates upon which this species has been seen in South Carolina, from A. T. Wayne's, 'Birds of South Carolina.'

"Coast of South Carolina near Charleston, Aug. 26th, 1893, a few hours before the devastating hurricane which swept the coast on the following day.

Sullivan's Island, S. C., Oct. 20th, 1906, seen at 7 a.m. At 5 p.m. the wind was blowing at the rate of 64 miles per hour."

Both of these observations, as will be noted, were made just before, or during, high gales of wind, which swept the birds up from the tropics. Why the present bird came up, is a matter of pure conjecture, as the weather has been clear and fine for over a month, and continued so after the disappearance of the bird.

A keen look-out will be kept for any other wanderer during the summer and coming fall. I am indebted to Mr. Mikell for the privilege of recording this bird.—ALEXANDER SPRUNT, JR., *Charleston Museum*.

The American Soter in Florida.—On May 17, 1925, while driving along the beach at Atlantic Beach, eighteen miles from Jacksonville, I noticed some species of Duck in the surf close to shore. Approaching on foot I had a close examination of the bird, which only flew when I was within about one hundred feet of it. It proved to be *Oidemia americana*—the American Soter. As this is a rare bird at any time this far south, I was very much surprised to find it, and more so when, on June 14, in company with friends, we watched the same bird or another of the same

species at almost the same place. As we had high-powered field glasses, and the bird was swimming and diving very close in, in fact too close to stay out of sight under the water very long at a time, I was certain of its identity.—EARLE R. GREENE, 201 Adair Bldg., Jacksonville, Fla.

Hudsonian Curlew near Youngstown, Ohio.—On May 24, 1925, while looking for shore-birds on the flats adjoining Lake Milton, I noticed a flock of large birds standing at the water's-edge as I rounded a curve in the shore-line. With the aid of a 45x field telescope I was able to identify them as Hudsonian Curlew (*Numenius hudsonicus*), having carefully taken note of the long curved bill, head markings, etc. There were eleven of these birds in the flock. Upon consulting Fuertes' plates I was confirmed in my identification. The Curlews were at first observed at a distance of about fifty feet but I was able to get a little closer before they finally took flight.

Mr. Geo. L. Fordyce informs me that this is the first record of the Hudsonian Curlew in Mahoning County. Along Lake Erie, I am told by Dr. Lynds Jones, it is seen occasionally as a spring migrant.—BERTRAM F. AVERBACH, Youngstown, Ohio.

Avocet at Wallop's Island, Va.—On September, 1925, at Wallop's Island, five miles south of Chincoteague, Va., I secured two Avocets (*Recurvirostra americana*) from a flock of four. They were young of the year.—B. H. WARREN, Chincoteague, Va.

Swimming and Diving Activity of the Spotted Sandpiper (*Actitis macularia*).—Upon several occasions within the writer's experience, downy young of the Spotted Sandpiper, when closely pursued, have taken to the water, where they swam lightly although not very rapidly in making an escape. The young birds have been observed swimming thus so many times that the habit is doubtless well known among ornithologists, although but little seems to have been written about it.

It is possibly not so well known, however, that the normal, uninjured adult Sandpiper may not only swim but even dive to some depth in escaping an enemy. During mid-summer of 1916, at Sheldrake Point, Lake Cayuga, New York, an adult Spotted Sandpiper was observed characteristically feeding along the shore at a point where the bottom sloped so steeply that the water was rather deep a few feet out. The bird in its quest for food passed out of view behind a piece of driftwood. Hoping to see it better I slipped quietly up behind the log, and was surprised that, upon looking carefully, I could not locate the bird. In carelessly stepping upon the log I must have frightened the Sandpiper, which (as I subsequently determined) had been probing in the mud under a small projecting root. When the bird first flushed, its wings were fully spread, and it was headed for the open water of the lake. Upon seeing me towering above it, however, it turned its course abruptly downward, and without the slightest hesitation

flew straight into the water. With wings fully outspread and legs kicking it made its way rather slowly along the sandy bottom, until it was about eight feet out, in water over three feet deep. I pursued the bird, thinking at the time, strangely enough, that it was wounded. When I reached for it, it tried to go farther but apparently could not. Bubbles of air came from its mouth, and air bubbles were plainly seen clinging to the plumage of its back. At the time it was captured its mouth, eyes, and wings were all open, under water, and it remained at the bottom seemingly without difficulty. As it lay in my hands above water it seemed tired for a second or two, and then, without warning, shook itself a little, leaped into the air, and with loud, clear whistles, circled off a few inches above the water to a distant point of land.

At the time of this first unusual experience I was not in a position to know how often Sandpipers employ such means of escape. And since then not until May 7, 1925, at Chambersburg, Franklin County, Pennsylvania, did I see the action repeated. On this date I purposely came upon a Spotted Sandpiper suddenly and witnessed it employ almost the identical tactics in making an effective escape. At this time, however, the bird dove into running water, swam with wings and feet rapidly moving for about twenty feet, and emerged down stream, still flying, and made off in its characteristic way, only a few inches above the water.

If one is to observe this strange performance he must contrive to come upon the Sandpiper very suddenly. Rapid approach in the open always causes the bird to leave in its accustomed, usually deliberate, manner. I have never known the Sandpipers to escape the attack of a Hawk by diving, although it is reasonable to suppose that they sometimes do so.—
GEORGE MIKSCH SUTTON, *Game Commission, Harrisburg, Pa.*

Diving of the Spotted Sandpiper.—A number of records of diving of the Spotted Sandpiper (*Actitis macularia*) have been published in 'The Auk' and elsewhere but Mr. Sutton's note adds materially to our knowledge of the matter. One instance that came under my observation may be worth recording. The bird in this case was flying across a deep pond near Cape May, N. J., September 5, 1921, and was struck at by a Pigeon Hawk. It dove instantly, but bobbed up at once, resting on the water nearly a minute before taking wing, the Hawk having passed on over the pond.—WITMER STONE, *Academy of Natural Sciences, Philadelphia.*

Boreal Limicolae Summering in Florida.—Observations along the east coast of central Florida indicate that there is a not inconsiderable summer population of Limicoline birds which normally should be nidiating far to the north.

One expects to find an occasional straggler, out of season, as for instance, a Lesser Scaup (*Marila affinis*) which I picked up July 5, 1924, in an emaciated condition on the gulf coast of Wakulla County; or a lame adult Herring Gull (*Larus argentatus*) which was seen several times at Mosquito Inlet in the summer of 1923.

But one would hardly expect to find a flock of one or two hundred Sandpipers scurrying about on our beaches in June or July. Yet, the rather regular repetition of experiences of this sort leads me to wonder whether this state of affairs occurs elsewhere.

On practically every ride on the Ormond-Daytona Beach, a few Turnstones (*Arenaria interpres morinella*) may be seen, long after the abundant winter flocks have gone and before the return of the first fall migrants. These summer birds are not in the breeding plumage. In 1923, I saw Turnstones on June 3, 17, 24, July 1 to 15 (several different days), and from the first of August, common of course. In 1924, I was absent from this section from June 6 to August 9, but Turnstones were here when I left and common when I returned. This summer (1925) I have seen them each time that I have visited Mosquito Inlet and occasionally elsewhere along the coast. I have seen a few individuals on the gulf coast of Wakulla County on July 6.

On July 2, 1925, the commonest shore bird at Mosquito Inlet was the Sanderling (*Croethia alba*). One flock of eighteen individuals of this species was seen, and scattered birds were seen along the beach as we rode down to the Inlet from the town of Daytona Beach. On July 19, ten or twelve Sanderlings were seen on a mud-flat south of Daytona, on the Halifax River. These birds are mostly in the pale plumage of winter. Incidentally, I have not infrequently seen Sanderlings running about on the asphalt streets of Daytona Beach, dodging automobiles and pedestrians, and seemingly quite at home in such an environment.

At the Inlet, July 1, 1923, I saw a flock of at least two hundred Semipalmated Sandpipers (*Ereunetes pusillus*). Four miles south of Daytona, along the Halifax River, I saw a group of about one hundred of this species; this was on July 19, 1925. In 1923, I saw small flocks on June 3, 13, 24, July 1 to 15 (several different days). In 1924, they were here when I left on June 9 and were present when I returned two months later.

In short, there does not seem to be a day in the year when one cannot find Turnstones, Sanderlings and Semipalmated Sandpipers in this part of Florida. The first two are abundant all winter; the latter common only in spring and fall.

In addition to these three shore birds, I have seen Dowitchers (*Limnodromus griseus griseus*) on the first day of July, and the middle of August. This species, by the way, is very uncommon on the central east coast. I have seen Knots (*Calidris canutus*) in small flocks all through the months of June and July. Black-bellied Plover (*Squatarola squatarola*) (never in adult breeding plumage) I have seen at Wakulla Beach on June 29 and July 4, and at or near Daytona Beach, June 3, 7, 17 and July 2. There were ten of this species at Mosquito Inlet on July 2 of this year. Blackbellies are generally common (often in breeding plumage) by the middle of August, as the southward migration has begun.

Concluding this discussion of the status of certain Limicola in Florida in summer, I may say that the Spotted Sandpiper (*Actitis macularia*)

may be seen here in every month of the year but June. Between May 25 and July 15, they are absent. I have, however, seen a few in Wakulla County on July 5. The Willet (*Catoptrophorus s. semipalmatus*), so common at Wakulla Beach and other points in the State, is quite uncommon in the vicinity of Daytona Beach until the fall migration has set in. I saw but five individuals of this species between March 15 (date of arrival) and the middle of July, 1925.—R. J. LONGSTREET, *Daytona Beach, Florida*.

The American Egret (*Casmerodius egretta*) in Eastern and Central Pennsylvania.—While this species is known to wander widely during the summer, records from the central mountain district of Pennsylvania are always of interest. On July 2, 1925, a large white bird was observed along the Juniata River about a mile east of Mount Union, Huntingdon County. Subsequently it was found that the bird was slightly injured in the wing, and it was captured by Mr. Lynn Aukerman and shortly thereafter liberated. Two days later the bird was again captured and released by Mr. John Ross, of Mount Union. The bird apparently moved very little from the region where it was liberated, and on July 11 was again seen and captured by Mr. Robert Kidd who turned the bird over to Game Protector S. H. Price, of Shade Gap, who, in turn, forwarded it to me. Upon examination the bird proved to be an American Egret, probably (though not certainly) immature, but at least possessing a black-tipped upper mandible. Aside from a very minor injury in the left wing, the bird was in excellent condition, was quite fearless, and walked about the office quietly. It accepted live fish and ate them ravenously in the presence of an assembled group of observers. The fish were nibbled once or twice and swallowed alive. As they went down the neck their struggles could be observed almost until they entered the stomach. One large fish moved so violently after being swallowed that the whole body of the Heron quivered.

It is probable that this rare visitor wandered up the Susquehanna from the Atlantic Coast, and in its search for food followed the water-course north and west to the narrows of the Juniata. The bird was liberated at Wildwood Park Lake, near Harrisburg, where it was apparently much at home among the cat-tails and calamus of the marshy margin.

Since the above was written, a number of other occurrences of the Egret and Little Blue Heron (*Florida caerulea*) have come to my attention.—On July 20, 1925, Mr. H. R. Musselman, of Harrisburg, saw four American Egrets at a large pond along Conodoguinet Creek, between Cave Hill and Bellaire, Cumberland County. This flock of four was seen daily until July 26, the date of Mr. Musselman's departure from the region, and it is probable that they were present during the remainder of the month and perhaps longer, for food conditions were ideal for them. On July 26 two much smaller birds were seen, which were subsequently found to be Little Blue Herons. All of these birds, according to local fishermen, had been in the region for weeks previously.

On July 24, 1925, Mr. Mark M. Mattis, of Millersburg, was given a specimen of American Egret which had been found dead by two boys along the eastern Mahatango Creek, Dauphin County, not far from its mouth.

On July 24, 1925, Mr. Mathews Zedar, of Forest City, accidentally shot an American Egret at a private pond near Forest City, Susquehanna County. This specimen was sent to me for identification.

On July 25, 1925, Mr. Norman Wood, of Coatesville, saw so many Egrets and Little Blue Herons along the ponds and water-ways near Coatesville, Chester County, that he and his associates at first thought that the birds were nesting. Mayor Albert H. Swing, of Coatesville, stated that he had seen the birds (both large and small white herons) for some weeks about the town.

In a letter dated July 24, 1925, Mr. Earl L. Poole, of Reading, states that numerous white Herons have been seen in the vicinity of Reading, Berks County, and that they came in as early as July 17.

Another specimen of the Little Blue Heron, taken August 8, 1924, at Canton, Bradford County, is in Bucknell University, Lewisburg, Pa., which was mounted by C. H. Eldon, to whom I am indebted for the record.

On July 30, 1925, Mr. Aaron L. Landis, of Leola, secured an American Egret which had been shot by his brother-in-law at a pond not far from Leola, Lancaster County. This "crane," so Mr. Landis states, had been annoying the domestic Ducks.

From the above several notes it would appear that most of southeastern Pennsylvania has been visited by an unusually heavy invasion of White Herons, presumably from the south and east.—GEORGE MIKSCH SUTTON, *Game Commission, Harrisburg, Pa.*

The Egret in Connecticut.—On July 31, 1925, while driving past a large reservoir about ten miles north of Bridgeport, Connecticut, I saw a White Heron standing on the shore. I stopped and found it to be an Egret (*Casmerodius egretta*). The bird was fairly tame and allowed me to approach within fifty yards. The spot is about ten miles from salt water.—CLIFFORD H. PANGBURN, *Chappaqua, N. Y.*

An Egret and a Little Blue Heron in Rensselaer County, N. Y.—On the afternoon of August 2, 1925 an Egret (*Casmerodius egretta*) and an immature little Blue Heron (*Florida caerulea*) dropped into a small marsh in the town of Schodack, Rensselaer County. The nearest postoffice is at North Chatham, Columbia County.

The birds had not before been observed by residents in the vicinity and it is probable that August 2 marked the day of their arrival in the particular marsh. Both Herons were observed at short range and the Egret is now in the collection of the New York State Museum. It is apparently an adult male.

During the past few years, both species have been seen on several oc-

casions in the vicinity of Albany, particularly at Watervliet reservoir and at Niskayuna on the Mohawk.—SHERMAN C. BISHOP, *New York State Museum, Albany, N. Y.*

Diagnosis of a new genus of Buteonine Hawks (Coryornis, gen. nov.).—Small, round-winged Buteones (wing about 230–255 mm.), resembling *Rupornis* Kaup, but with young conspicuously different in color from the adults; middle toe less than half as long as tarsus (the latter half as long as tail) and with acrotarsium feathered on upper third; loral region densely bristled; outer toe decidedly longer than inner toe; adults barred or transversely spotted below with gray or cinnamon-rufous and upper parts grayish brown (much as in *Rupornis*), but young with under parts striped with brown and upper parts more or less variegated with buff.

Type, *Rupornis ridgwayi* Cory (*Coryornis ridgwayi*). Named in honor of the late Charles B. Cory.—ROBERT RIDGWAY, *Olney, Ill.*

Kingfisher and Cooper's Hawk.—About three years ago I witnessed a little incident which seems worthy of a brief note. It was the case of a Kingfisher pursued by a Hawk, and the escape of the Kingfisher by sudden dives into the water. Doubtless similar performances have been observed by others, but I do not recall having seen any published account of such an instance.

The present incident occurred on August 26, 1922, in the wilds of northeastern Minnesota. The morning of that day was still and foggy, and my wife and I were in our canoe on an expansion of the river on the banks of which our camp was situated, quietly engaged in an attempt to hook a mess of fish for our breakfast. Suddenly the loud and excited rattle of a Kingfisher broke the stillness, and in an instant the bird itself shot past within a few yards of us, in desperate flight, followed by a Cooper's Hawk. It was apparent at a glance that this was no playful act, but that the Hawk was in deadly earnest and the Kingfisher well aware of the fact. We sat motionless and watched.

The birds were flying low over the water, perhaps within five or six feet of the surface. The Kingfisher clearly was doing its best, but the Hawk gained rapidly. The next moment, just as the Hawk appeared about to strike, the Kingfisher executed a sudden dive into the water which it hit with a loud splash. Before the baffled Hawk could check its own headlong flight the Kingfisher rose and with a challenging rattle flew away in the opposite direction.

But the Hawk was not thus easily to be defeated in its purpose. Again it took up the pursuit and in a few moments again was close upon the clumsy bird it had marked for its prey. But the same thing happened as before. When the swift-winged Hawk was about to strike, the Kingfisher, as if with instinctive judgment of the right moment, made a sudden nose dive, sending the spray flying. The Hawk by its momentum was carried some yards beyond.

As we sat perfectly still in the canoe, both participants in this little wilderness drama seemed entirely unaware, or at least unmindful of, our presence. Five or six times the Hawk renewed its attempts at a meal on the Kingfisher, and each time was skilfully foiled. So long as there was water below, the Kingfisher evidently was master of the situation. What finally discouraged the Hawk I cannot say. Perhaps it became suspicious of the canoe with its occupants. At any rate, after the last fruitless attempt it rose and disappeared in the fog, while the Kingfisher, alighting on a perch at the water's edge, with bristling crest and many a hitch and jerk, as if to reassure itself of its own personal solidarity, burst forth in a rattle loud and ringing with triumph if not actually vibrant with inexpressible scorn.—CHARLES EUGENE JOHNSON, *State College of Forestry, Syracuse, N. Y.*

[Just as this note goes to press, a precisely similar experience was related to me by Mr. Francis J. Stokes, of Philadelphia, who observed the birds on a river in the northern part of New Brunswick in August, 1925. He was not sure of the species of Hawk. The Kingfisher dove and as the spray splashed up the Hawk rose slightly and its momentum carried it on, while the emerging Kingfisher, reversing himself in some way, flew back in the opposite direction. The operation was repeated eight to twelve times.—Ed.]

Northern Pileated Woodpecker, Cummington, Mass.—The Pileated Woodpecker, is an exceedingly rare bird in the New England States and it was an exciting moment when I first saw this bird, on May 30, 1925. The bird was first seen in a large and almost impenetrable bog filled with dead trees and overgrown with creepers and brambles and is some fifteen acres in extent. The conditions for the Pileated Woodpecker in this swamp are exceptionally favorable. On May 30 one bird was seen in flight, on June 1 two birds were seen, perched Woodpecker fashion, on a dead tree. I approached the birds within about forty feet; they seemed not to be aware of my presence. The female bird is distinguishable by a smaller amount of red on head and crest also by her more olive forehead. On June 2, I heard the Flicker-like call note and the slow heavy tapping of this Woodpecker. I see no reason for doubting the existence of a nest and I will try my best to find it.—VICTOR H. ROSEN, *Cummington, Mass.*

Strange Nesting-site of the Chimney Swift (*Chætura pelagica*).—It is a matter of common knowledge that Chimney Swifts built their nests in caves, hollow trees, and similar sheltered situations, before they had access to man-made chimneys. Not until recently, however, have I had opportunity to observe nests built elsewhere than in a chimney, and in the present case the birds seem to have voluntarily chosen not to use chimneys, since several were available. At Conrad (locally known only as Hull's Station), Potter County, on May 18, 1925, one such nest was found in an old, open stable, three in adjoining implement sheds, and one

little . . . our meal there . . . came last . . . sher, any a . . . rity, grant age of . . . dated birds . . . He spray s on, back twelve . . . Pile- states y 30, filled some er in seen on a seemed by a head. ng of t and . . . a).— nests had had and in use only was l one

in a rather well built garage, all these buildings being within a few hundred yards of each other. These nests had all been built during a previous year, and three nests at least had been occupied for several seasons.

On the morning of May 19 (shortly after the birds had returned from the south, according to the natives), when we opened the door of the garage a pair of Swifts were found clinging, side by side, one or two inches below the nest, to the board upon which the nest was fastened. The structure was plastered to the board about seven inches below the ridge-pole of the roof, on the end of the building, and not on the underside of the roof. The nest stuck securely to the flat surface of the board, and there was no corner or projection which had aided the birds. According to the owner of the garage this nest had been observed for the past seven years or more, without its having fallen or being rebuilt, and certain it is that there was a great mass of excrement, over three inches thick, on a projecting shelf a few feet below the nest. The birds entered the garage not through the door but by an irregular hole in one side. In the other buildings where the birds were nesting, abundant apertures permitted the birds easily to come and go as they pleased, with the Barn Swallows.

At first I was amazed that the Swifts should choose such sites with several chimneys close at hand. My present opinion is, however, that these chimneys were so often filled with smoke in this wild mountain valley where the cool nights and constant cooking demanded fires, that the Swifts were perhaps obliged to seek nesting sites elsewhere. One thing was noticeable: that in every case as dark a spot as possible was chosen in which to place the nest.

Close examination of the nests showed that already a new coating of saliva had hardened about the rim, corners, and fastening portions of the nest, and the old saliva which had held the structure up was completely covered and added to above, but not below the nests. No new twigs had been added so far as I could see. There were no eggs in any of the nests, and on the chill mornings the birds were rather sluggish in movement.

—GEORGE MIKSCH SUTTON, Game Commission, Harrisburg, Pennsylvania.

Unusual Occurrence of the Chimney Swift.—On June 23, 1925, I was returning to Charleston, S. C., from New York, via the Clyde Steamship Line, and late in the afternoon of the date mentioned above, while off the Delaware coast, I was surprised to see a Chimney Swift (*Chaetura pelogica*) flying about the ship. The bird did not appear to be tired in the slightest, but continued circling and swooping about the ship for at least twenty minutes, sometimes coming as close to the rail as fifteen or twenty feet. The ship's position was about 25 miles off-shore, and of course, well out of sight of land.

Several of the passengers noted it, and remarked on the presence of a bat (!) so far out at sea. After flying about, and pursuing the usual tactics of a Swift after its supper of insects, it disappeared in a westerly direction. I have made like voyages in the past, and am naturally always

on the lookout for any feathered wanderers, but the Swift was hardly looked for, and I have never before seen one so far from shore.

Many Wilson's Petrels were seen on the way south, and near the Diamond Shoals Lightship, a flock of Greater Shearwaters, numbering 62 individuals was counted. One Audubon's Shearwater was noted off the South Carolina coast.—ALEXANDER SPRUNT, JR., *Charleston Museum*.

Broad-tailed Hummingbird Bathing in a Swift-flowing Mountain Stream.—June 7, 1925, I spent the day in Santa Fe Canyon at an altitude of 8,500 feet. On crossing the little stream I saw a male Broad-tailed Hummingbird (*Selasphorus platycercus*) flying over the stream. I trained my field glasses on the bird and saw it settle down in the water with its body nearly half submerged and with the wings in motion as in flight. With the water rushing rapidly about the body of the bird, it remained stationary. The bird stayed in the water for a few seconds, made a short flight and then repeated the performance possibly half a dozen times.

Sometimes it varied its tactics and, with wings at rest, would alight on a rock over which the water was flowing to a depth of one-half inch.

I watched the bird about ten minutes, then it grew tired of the performance and flew away.—J. K. JENSEN, *Santa Fe, N. Mex.*

The Dance of the Tangara (Chiroxiphia caudata (Shaw)).—A short time ago I was surprised to find in Dr. Knowlton's admirable 'Birds of the World' no mention of the extraordinary dancing habits of certain of the Manakins. This circumstance led to an examination of the other probable sources at my command for accounts of these habits, and I was further surprised to learn that very little regarding them has been put in print anywhere.

Charles C. Nutting has given us in his paper 'On a Collection of Birds from Nicaragua' (Proc. U. S. National Museum, Vol. VI, 1884, p. 385) an excellent account of the dance of *Chiroxiphia linearis* but there seems to be nothing published in English that can really be termed a description of the remarkable performance of *Chiroxiphia caudata*. J. F. Hamilton's remarks in his 'Notes on Birds from the Province of São Paulo, Brazil' (The Ibis, 1871, p. 305) are quite perfunctory, and are frankly derived from hearsay; while A. H. Evans' single sentence in 'The Cambridge Natural History' (Vol. IX, Birds, 1899, p. 479) is evidently drawn from Hamilton. And in the bird volume of 'The Standard Natural History' (Vol. IV, 1885, p. 473) we find but two sentences, taken, no doubt, from the Danish of Reinhardt. Beyond this I know of nothing in English.

Turning now to other languages, we find the first mention of the Tangara's dance in J. Reinhardt's 'Bidrag til Kundskab om Fuglefaunaen i Brasiliens Campos' (Videnskabelige Meddelelser fra den naturhistoriske Forening i Kjøbenhavn, 1870, p. 129). This is followed by the German

account of Berlepsch and Jhering in their 'Die Vögel der Umgegend von Taquara do Mundo Novo, Prov. Rio Grande do Sul' (Zeitschrift für die Gesammte Ornithologie, 1885, pp. 138-139). Lastly, there is the Portuguese account—the best description with which I am acquainted—in Dr. Emilio A. Goeldi's 'As Aves do Brazil' (1894, pp. 333-335). Besides being more or less inaccessible, each of these accounts differs in some respects from my own observations, so the publication of my notes made in the splendid forest reservation surrounding the city water supply in Rio Janeiro may not be entirely unwarranted.

By whatever means this splendid forest has been spared, it is today a wonderful combination botanical garden and zoological park, and, by reason of the old stone aqueducts that reach up and back into its very heart, it is almost as easy of access as the more renowned artificial gardens below. One of these aqueducts meanders along nearly two thousand feet up on the flanks of the big ridge terminating in Corcovado, and on the soft earthen path that follows its windings I have often wandered in search of the forest creatures. And as often I have been rewarded; sometimes by a flock of astonishingly beautiful multicolored Tanagers, or maybe by a young armadillo surprised while nosing along a bank in quest of insects, and always by great blue morphos flapping lazily through the shadowy vault above the undergrowth. Occasionally, queer liquid calls were sure to arrest attention on an unbelievable bird of blue, with black head, wings, and tail, and with crown of brightest scarlet. It is true, the books describe such a bird—the Tangará of the Brazilians—but to see it alive in its dim retreats inclines one to believe it some woodland sprite rather than a mere matter of flesh and blood, bearing the diagnostic character, feathers, that would forever relegate it to a humdrum class along with Chickens and Ducks and English Sparrows.

Visualize now this winding pathway on May 14, 1922; the indescribable luxuriance of the subtropical jungle, its normal shadows turned to dusk by a great cloud drifting in slowly from the South Atlantic; the giant trees festooned with long ropes of lianas, and burdened with myriads of epiphytes from which the condensing vapors fall like rain upon the already dripping foliage far below; the cool rill murmuring over ancient, moss-grown masonry. In such a weird atmosphere one is liable to relax his scientific vigilence a trifle perhaps, and glance expectantly about for an elf or a hobgoblin.

I had been moving quietly along the trail when, about noon, I was brought up short by a commotion the like of which I had never seen. A dancing contest! Could I believe my eyes? But there were the dancers right before me, so engrossed in their performance that they were unaware of my approach.

On a nearly horizontal branch, over the old aqueduct, sat a green-cloaked figure that might well have been the piper, but which I discovered to be really the judge—the dancers were their own pipers then—and about this quiet figure whirled a circle of flaming torches. As I watched trans-

fixed, the system of the dance gradually became apparent, and the gyrating torches were resolved into caps of scarlet. Then I knew that the dancers were Tangarás. There were only three, yet so rapidly did they move that the circle seemed almost unbroken. Bowing low, with beak outstretched, a Tangará would sidestep swiftly until it seemed that he must surely knock the judge (just a demure female) into the aqueduct, leap over her, hover on fast-beating wings facing her a moment, and then begin again the quick sidewise run up the branch. Each was closely followed by the other two, while all three kept up a perfect din of chatter sounding something like *trā, trā, trā*, rapidly repeated. At intervals a sharp signal note was given, upon which all would stop for a moment's rest, only to begin all over again before they could conceivably have caught a breath. How long this game would have continued one can not conjecture, for there had been no lag, no loss of enthusiasm, when some movement apprised them of my presence, and judge and contestants shot away into the jungle.—ERNEST G. HOLT, *Carnegie Museum, Pittsburgh, Pa.*

White-crowned Sparrow at Charleston, S. C.—On May 5, 1925, a White-crowned Sparrow was observed repeatedly in my garden in the city of Charleston, S. C. I had the bird under observation for at least an hour, and several times I viewed it at a distance of not more than eight feet as it fed on Chicken feed scattered on the ground just outside my study window.

Audubon says of this species in 'Birds of America': "In the winter of 1833, I procured at Charleston in South Carolina, one in its brown livery."

Arthur T. Wayne in 'Birds of South Carolina' says: "Audubon must have been mistaken in his identification and have failed to recognize the White-throated Sparrow in its immature plumage, since the White-crowned Sparrow is a very rare bird in the South Atlantic States and does not winter. On October 26, 1897, I secured a young male of this beautiful species near Mount Pleasant. . . . This is the only specimen I have ever seen or taken, and as yet remains the only valid record for the State."

Since there is no doubt whatsoever about the identification of the White-crowned Sparrow observed by me on May 5 last, another valid record has now been added.—HERBERT RAVENEL SASS, *Charleston, S. C.*

Henslow's Sparrow in Helderbergs, N. Y.—Henslow's Sparrow (*Passerherbulus henslowi*) is recorded by Eaton in 'Birds of New York' as "breeding in Albany County, 1908," while in the Albany County list of the same work he lists it only as "T. V. rare."

It really is a common breeding species at Thacher Park twenty miles south of Albany. Here, at an elevation of 1000 feet, it is found in three old fields, rather damp soil, and in mid-July, hip-high with white and yellow Bush clover and carpeted with hop clover. Pine seedlings and Goldenrod are also features of these fields. The colony consists of at least twenty pairs and is on the Crevice road.

At the foot of the Meadowdale-Indian Ladder road a mile from the above colony is another colony of many pairs, in fields of the same nature, rolling, barren, weedy, uncultivated waste-land. Bush clover is absent here, the fields being mainly covered with cinquefoil and Goldenrod.

The birds are very shy, yet allow an approach to within thirty feet. They stop singing about 7 a. m. and do not start again until evening. One male, however, sang every five seconds "flee-sic" for at least 24 hours during a rain spell on July 26, 1925, that is, all night as well as all day. "Flee-sic" seems to be sung normally at the rate of sixteen times a minute. A person acquainted with the song cannot overlook these species.

"Flee-sic" is a song, not a call note. The male seeks a spray of weeds and with drooping tail lifts his bill straight up, to violently jerk out its chebec-like song. If suddenly frightened from the ground it gives the faint "flee-sic."

The bird has also a full, long, song, almost identical with that of the Grasshopper Sparrows without the two starting notes: just a low crescendo buzz—like an insect's call. The only other call is a sharp "dzit" or "psit" given in alarm by male and female.

The songs are just as loud three hundred yards away, and the bird will usually sing until you are very close, then he dives with a fluttering, pumping, flight into the grass to lie quiet until one almost steps on him. If persistently stalked they usually fly into a shrub and "freeze."—EDGAR BEDELL, Schenectady, N. Y.

English Sparrows and Robins.—During the latter half of May, 1925 a pair of Robins built a nest in a locust tree in front of my house. Four eggs were laid and in due season four young appeared. The parent birds have since been busy feeding the young. A pair of English Sparrows discovered the Robin's nest and saw the process of feeding. Now for about two weeks the Sparrows have been watching the Robins closely, and whenever one of them flies down on the lawn in search of food for the young the Sparrows will follow it. As soon as the Robin captures a grasshopper or a worm and flies to the nest, the Sparrows will follow and alight on the rim opposite the Robin. As soon as the Robin has placed the food in the open bill of one of the youngsters, one of the Sparrows reaches over and pulls the food out and flies away to a quiet place to devour it.

The young Robins do not seem to suffer from lack of food, so I imagine the parents may have to work harder to offset the robberies of the Sparrows.—J. K. JENSEN, Santa Fe, New Mexico.

Yellow Throated Warbler (*Dendroica dominica dominica*) on Quaker Ridge, Mamaroneck, N. Y.—On May 18, 1925, I was attracted, early in the day by a song, at once familiar yet unfamiliar to me; a song suggesting a combination of an enthusiastic Indigo Bunting and a subdued Water Thrush (*Seiurus motocilla*) which seemed to come from a close twenty year stand of Norway spruce (*Picea excelsa* Link) on the

southeast side of my property. After a search of ten minutes or more I discovered a male Yellow Throated Warbler in full nuptial plumage in the topmost branches of one of these spruces. My mind at once flashed back to the spring of 1918 when I had become more or less familiar with this Warbler at Camp Hancock, Augusta, Ga. Being unable, at that time, to study it for long, I returned, in the afternoon, and, at last, relocated the bird at the northern end of the line of spruces, which were well filled with Canada and Magnolia Warblers. Subsequently, until the morning of the 21st, when I last saw it, I examined the bird twenty-three separate times and for periods varying from ten to twenty minutes each. On one occasion (7:08-7:19 A.M., May 19, standard time) my watch indicated that it sang on an average of once every 84 seconds, although there were periods when it sang at intervals of 21, 27, 33 and 40 seconds, as against 124 and 209 second intervals. On only one occasion did it come within ten feet of the ground (5:48 P.M., May 20) but kept to the tops of the spruces mentioned, feeding, decidedly sluggishly, for a Warbler, at heights varying from 30 to 20 feet. So many Canada, Magnolia, and other Warblers were coming through at the time, I was never able to locate the bird, except when it sang. Roughly estimating its periods of song were as follows: (standard time) sunrise or about to 9 A.M. and 4:30 P.M. to 7:30 P.M. although I twice heard it during the early afternoon (2:11 P.M., May 19 and 3:37 P.M., May 20). Its feeding suggested that of the Pine Warbler; close inspection of the branches rather than the darting methods of such as the Redstart, Parula, and other tree-haunting Warblers. As I have a keen dislike to collecting a bird when I am sure of its identity, I forbore disturbing my pretty little visitor, and thus let pass an opportunity to examine the contents of its stomach. I believe, however, that it fed almost exclusively on a species of gnat which swarmed in clouds about the tops of the spruces, and attracted thither, during the period stated, an unusual number of Canada, Magnolia, Black-throated Green, Black and White, and several Blackburnian Warblers. On the morning of the 21st, I found it for the last time and heard it sing, from my study window, at 8:51 A.M. Whether the bird followed the Magnolias and Canadas I do not know, but its disappearance coincided with a marked lessening of the former species in so far as my spruces were concerned. This visit is a life-record for me in Westchester County.—RUTGERS R. COLES, Nestle-down Farms, Mamaroneck, N. Y.

The Tennessee Warbler at a low altitude in Vermont.—On July 1, 1925, I saw a Tennessee Warbler (*Vermivora peregrina*) near Middle-town Springs, Rutland County, Vermont. The bird was feeding in a dense alder thicket and allowed me to approach within eight feet. The thicket is in a large bog known as Tinmouth Channel Swamp. It has a close stand of arbor vitae with a mixture of other evergreens, but is at just one thousand feet elevation and so can hardly be considered as in the Canadian Zone where the Tennessee Warbler might be expected during

the breeding season. It is interesting to note that on the same day I saw a female Red-breasted Nuthatch (*Sitta canadensis*) in the same swamp. While the breeding records of the latter species indicate a more southerly distribution than in the case of the Tennessee Warbler, it is, I believe, regarded as a Canadian Zone type. Other Warblers noted in this same swamp from June 27 to July 1st were the Nashville (*Vermivora ruficapilla ruficapilla*), Magnolia (*Dendroica magnolia*), and Blackburnian (*Dendroica fusca*).—CLIFFORD H. PANGBURN, Chappaqua, N. Y.

The Short-billed Marsh Wren breeding in Westchester County, N. Y.—On May 24, 1925, I discovered a colony of at least ten pairs of the Short-billed Marsh Wren (*Cistothorus stellaris*) in a marsh near Chappaqua, Westchester County, N. Y. While no nests were found, the birds were present throughout the breeding season and I often saw them carrying food to the young. The spot where the Short-billed Marsh Wren occurred is, except for two or three narrow ditches, comparatively free from water. It is filled with tussock grass and sedges but has only one small clump of cat-tails. Since Dr. Fisher's notes at Ossining in the early eighties, I know of no Westchester County breeding records for this species, which is, in fact, exceedingly rare near New York City at all times.—CLIFFORD H. PANGBURN, Chappaqua, N. Y.

Mountain Chicadee With an Adopted Family.—May 15, 1925, I made a trip ten miles southeast of Santa Fe intending to examine a number of bird boxes. One of the boxes contained a set of six eggs of the Mountain Chicadee (*Penthestes gambeli gambeli*) and three eggs of the Gray Titmouse (*Baeolophus inornatus griseus*) with the Chicadee incubating. I took out the six eggs of the Chicadee and left those of the Titmouse.

May 22, the Chicadee was incubating four Titmouse eggs, all of which hatched. June 8, I again visited the box and found the Chicadee busy feeding four young Titmice.—J. K. JENSEN, Santa Fe, New Mexico.

Ruby-crowned Kinglets Nesting in Michigan.—On July 4, 1925, Mr. M. J. Magee, Mr. W. J. Breckenridge and myself found a pair of Ruby-crowned Kinglets carrying food; and as this species has never been found nesting in Michigan, according to Prof. W. B. Barrows, it awakened more than ordinary interest.

Search at the time failed to find the nest. But on the following day, Mr. Breckenridge and I returned to the locality and found the nest, containing six or seven young, in an open cedar, spruce, and tamarack swamp, with a wet springy moss underfoot and a small lake close by on Sugar Island, Chippewa Co.

The heart-shaped nest, six inches long and four inches across at the top, was in a small twelve foot spruce about six feet from the ground.

The top of the nest was woven and fastened to a dry, short branch leaning downward along the trunk of the tree, thus leaving the bottom

free, and the nest about an inch from the trunk. The whole nest was well concealed, covered and protected by several thick green branches hanging directly above it. The nest was made principally of moss, evergreen needles, poplar catkins, grass and a feather. It was thick and had a soft, spongy feeling. The young had but recently hatched. A short portion of the Kinglet's spring song was frequently heard and when the parent was disturbed it chattered like a scolding House Wren.—K. CHRISTOFFERSON, D.D.S., *Sault Ste. Marie, Mich.*

Changes in Bird Life in Amherst, Massachusetts in Twenty Years.—This spring (1925) in Amherst, Mass., I was delighted to hear Song Sparrows singing on every side and later to note that they nested freely through the town. Twenty years ago these birds were only to be found in thickets outside of the village. Another surprise was the summing of a Maryland Yellow-throat on my mother's grounds in Amherst, as this species used to be even more distinctly a bird of tangles on the outskirts. On June 10, I heard a typical *wichery wichery wichery* from the garden, but on my next visit—July 1—I was much puzzled over an entirely new song which, to my astonishment, I discovered came from a Maryland Yellow-throat. I stayed all morning and heard nothing but this song from him. It was a warble with little accent and no pauses except a slight one in the middle: *tee-der-der tee-der-der*.

An especially lovely bird, that has established itself in town since my school days, is the Wood Thrush which may now be heard singing in the ravine near the site of the old High School. On June 23, we saw a Black-throated Blue Warbler and heard its curious song in woods near Amherst at an elevation of only 200 feet; this is certainly a new summer bird in this immediate region, although we found it breeding on the Pelham Hills and on Mount Holyoke four years ago.

Birds that have increased in numbers are Rose-breasted Grosbeaks, Barn and Cliff Swallows and House Wrens. All of these, twenty years ago, were uncommon; now they would be called common.

Species that have decreased are Bobolinks, Least Flycatchers and English Sparrows.

The Starling is, of course, entirely new, having first appeared in 1910.¹ I have had no experience with it as a nesting species, but in the winter, in Amherst, it seemed to me quite an entertaining addition to the otherwise scanty bird life.—MARGARET MORSE NICE, *Pelham, Mass.*

¹ Cooke, May T. Spread of the European Starling in North America. U. S. Dept. Agric. Dept. Cir. 336, p. 3.

RECENT LITERATURE.

Bent's 'Life Histories of North American Wild Fowl.'—Mr. Bent keeps steadily at his great task of compiling his life histories of the birds of North America and if the Government Printing Office could only keep pace with him the work would be farther along than it is. The present volume¹ completes the Ducks, Geese and Swans and we learn from the introduction that the volume covering the Herons and Rails is nearly completed, leaving only the shore birds to bring the water bird volumes to completion.

The present part includes the remainder of the Ducks, i. e., the Eiders, Sooters, Golden-eyes, Old-squaw, Buffle-head, Harlequin and Ruddy Duck and the Geese and Swans. In glancing through its pages we are more than ever impressed with the thoroughness of the author's work and with the vast amount of new information that has been accumulated through exploration in the arctic and subarctic regions in recent years. One also realizes that the time will not be far distant when a work of such scope will be an impossibility for one man and our monographs of the future will have to treat only of special groups or of special sections of the country.

The accounts of the breeding of various familiar winter water fowl in their far off arctic summer homes is extremely interesting reading, while the hundred odd illustrations bring vividly to our minds the habitats of the various species. These are more varied in character than the plates of some of the earlier volumes, illustrating the birds and their haunts as well as the nests and eggs.

As most of our readers are familiar with the plan of Mr. Bent's earlier volumes and his admirable style of treatment, it is necessary only to say that he has in the present part fully maintained the high standard that he there established.

He requests those who have information of value on the breeding of the shorebirds to submit it at once, in order that it may be included in volume VI, and we heartily urge all readers of 'The Auk' to give heed to this request, as Mr. Bent deserves all the assistance and cooperation that we can give him.—W. S.

La Touche's 'Handbook of the Birds of Eastern China.'—One of the most welcome publications to the general ornithologist, that has appeared recently, is Mr. La Touche's 'Handbook of the Birds of Eastern

¹ Life Histories of North American Wild Fowl. Order *Anseres* (Part). By Arthur Cleveland Bent of Taunton, Massachusetts (vignette) Bulletin 130 U. S. National Museum. Washington, Government Printing Office. 1925. pp. 1-376, fifty-nine of which are plates with one additional plate as a frontispiece.—Price 90 cents per copy to be ordered from the Superintendent of Documents, Government Printing Office, Washington, D. C.

China.¹ Those who have had Chinese collections to work up and those who have desired some comprehensive knowledge of the avifauna of this portion of Asia have been in despair for the lack of any adequate modern handbook.

From few other parts of the world have we had such a host of new forms of bird life described, in recent years, as from the provinces of China, a fact which has made the older works on the avifauna of the country quite out of date.

Mr. La Touche is peculiarly well equipped for the task which he has undertaken, having been a student of Chinese birds for a number of years not only in the museum but also as a field ornithologist thoroughly familiar with the country.

In a short introduction he explains that, while his first intention was to write of the birds of the whole of China, he has been compelled to limit his work to the eastern provinces—Chihli, Shantung, Kiangsu, Chekiang, Fohkien, and Kwangtung, on the coast, and Anhwei and Kiangsi—interior provinces with similar avifauna.

The region thus covered forms a definite section of China and includes about half of all the species known from the country. It is divisible into two distinct zoological regions separated by the lower Yangtse Valley, the northern belonging to the Palaearctic zone and the southern to the Oriental.

The author's method of treatment is to present, under each species and subspecies, a brief synonymy, a good description with measurements, a statement of distribution in China, with the character or seasons of occurrence in the several provinces, if different, and then a summary of his field experience with it and quotations from other works, etc., with notes on nests, eggs and songs. This plan seems altogether satisfactory and furnishes the information desired by the technical ornithologist, the collector or the traveller.

The part of the work now before us covers ninety-five forms of the families Corvidae, Paridae, Panuridae, Sittidae, Certhiidae, Troglodytidae, Paradoxornithidae, Timaliidae and Pycnonotidae. The type is rather small so that a vast amount of information is included in the ninety-six pages. There are three half-tone plates depicting landscapes and methods of decoy hunting.

We cannot too highly recommend Mr. La Touche's book to those desiring knowledge of the birds of China or to libraries which desire standard works on the birds of various parts of the world. We wish the author all speed in completing his task, and trust that it may meet with a reception

¹ A Handbook of the Birds of Eastern China (Chihli, Shantung, Kiangsu, Anhwei, Kiang, Chekiang, Fohkien, and Kwangtung Provinces). By J. D. D. LaTouche, Part I. (Containing Families Corvidae, Paridae, Panuridae, Sittidae, Certhiidae, Troglodytidae, Paradoxornithidae, Timaliidae, and Pycnonotidae.) Taylor and Francis, Red Lion Court, Fleet Street, London, E. C. 4, July, 1925. pp. 1-96. pl. I-III. Price 7s. 6d net.

cordial enough to induce him to undertake a companion work covering the remaining provinces of this interesting country.—W. S.

Kuroda's 'Avifauna of the Riu Kiu Islands.'—This handsome volume¹ of small folio size may well be termed a monograph of the birds of the interesting island group known variously as the Loo Choo or Riu Kiu chain, which, as the author says, constitutes one of the most interesting regions of the world from a zoogeographic point of view. Lying between Formosa and Japan it forms the most eastern extension of the Oriental Region, connecting it with the Palaearctic, to which the Japanese Islands belong.

The text of the work is entirely in English which greatly increases its usefulness to ornithologists. The eight excellent color plates are from paintings by a Japanese artist, Juzo Kobayashi, and the printing, done by the Tokyo Printing Co., is admirable.

While Mr. Kuroda has apparently consulted all publications relating to the birds of the islands, his work is based primarily upon collections made for him by Mr. Orii who spent fourteen months on the islands, from August, 1921 to October, 1922, visiting practically all of them.

The treatment of the 281 species and subspecies now known from the Riu Kius, consists of references to the original place of publication, with the type locality; a discussion of specimens in the author's collection, consisting of 1621 skins, with field notes by the collector and extracts from previous publications relating to the form under consideration. In the case of the subspecies there is also a list of all the other recognized subspecies with their distribution, which extends the usefulness of the work far beyond the limits of the Riu Kiu Islands.

Under "Summaries and Conclusions" there is an historic consideration of Riu Kiu ornithology with lists of species described by the author as new in previous publications, and of species here recorded from the region for the first time. Also lists of forms peculiar to the group (58 in number) those common to the Riu Kiu group and Japan (63), and to the Riu Kius and Formosa (23). The author then divides the group into four regions and lists the forms characteristic of each, adding a table of the species and subspecies so far recorded from each of the thirty-three islands of the chain. There is also a map and a bibliography of 62 titles.

One of the plates illustrates the young and adult of the remarkable Jay, *Lalocitta lidhti*, apparently the most distinctive species of the islands, which was first described by Bonaparte in 1850 as from "Japan." The true habitat, Amami-Oshima island, the most eastern of the group, was not ascertained, according to our author, until 1904, when Owston's Japanese collectors Osa and Osada, visited this spot. Curiously enough, however,

¹ A Contribution to the Knowledge of the Avifauna of the Riu Kiu Islands and the Vicinity. By Nagamichi Kuroda, Rigakuhakushi with 1 table, 8 plates and 1 map (vignette). Published by the author. Tokyo, 1925. pp. 1-vi + 1-293.

specimens were obtained in 1896 by the late Dr. Wm. H. Furness, Jr., which are in the collection of the Academy of Natural Sciences of Philadelphia and which seem to antedate the Owston examples. Unfortunately, they were not recorded at the time of collection.

From 1909 to 1914, we learn, some 8000 specimens of this rare and beautiful bird were exported by Japanese milinery collectors to Europe and America. This trade was stopped by the war and we sincerely hope that means may be found to prevent its recurrence, or this interesting species will undoubtedly become extinct.

Mr. Kuroda is to be congratulated upon an admirable piece of ornithological work and his publishers upon a handsome example of book making.
—W. S.

Hachisuka's 'Comparative List of the Birds of Japan and the British Isles.'—This handsomely gotten up work¹ recalls Bonaparte's classic 'Comparative Lists' of the birds of Europe and North America and of Rome and Philadelphia and the names appear in parallel columns as in those publications.

Identical forms, or those that are truly representative of each other in the two countries, are placed opposite one another, while those that occur in one country, without a representative in the other, have a blank in the opposite column.

Inasmuch as the reference to the place of publication of each species and subspecies is given along with common names, in both Japanese and English as regards the Japanese column, the list becomes truly a check list of the birds of the two countries and is especially valuable in the case of Japan, since so many new subspecies have been described from there in recent years. The ranges are not given, it is true, but in many cases there is an indication as to whether the form is a breeder, an exceptional visitor or a rare visitor, and we presume that those with no such indication are regular visitors. The Japanese column, as explained by the author in the introduction, refers to the island of Japan only since Korea, Formosa and the Loo Choo Islands belong to other zoogeographic regions, and their inclusion would defeat the object of a list of this kind.

We regret that the author did not devote a few pages to a summary of the data that he has so carefully tabulated, in order to show in quantitative terms the relation between the two faunas. The numbers of his lists show 524 species and subspecies for Japan and 500 for the British Isles while a hasty count indicates 411 species for Japan and 420 for the British Isles and, considering the genera of land birds, we find 120 for the former country and 113 for the latter. There appear to be 39 genera found in Japan but not in the British Isles, and 32 in the latter but not in

¹ A Comparative Hand List of the Birds of Japan and the British Isles. By Masa U. Hachisuka F. Z. S. Member of the Ornithological Society of Japan, member of the British Ornithologists' Union. Cambridge at the University Press. 1925. pp. [i-vii] + 1-107.

Japan, while five families appear only in the Japanese column and two only in the British. These figures, however, do not have much weight as, in comparing faunas, the resident and summer resident species count for much more than the transients or occasional visitors.

We trust that the author of this valuable list will follow it up with a discussion of the composition of the two faunas, the relative tendency of the species to differentiate in the two environments, the origin of the elements and other problems which will naturally present themselves.—W. S.

Canon Raven's 'In Praise of Birds.'¹—"This little book," says its author, "makes no pretension to literary beauty or to scientific importance: it is the work of an amateur who has neither the genius to create a prose poem nor the knowledge to contribute effectively to the expert study of ornithology. His only excuse for writing must be that he was born with a love of nature, particularly of birds, and that in a very busy life he has found them a constant source of health and refreshment."

In spite of this modest estimate of his ability we find his "little book" a delightful account of his experiences in studying and photographing British birds and if some of his passages are not prose poems they are most pleasing pictures of rural England, of country side and seashore. There are also several chapters covering his experiences in Holland in photographing birds of the Dutch dunes, and his association with Monsieur Burdet and other kindred spirits.

Mingled with it all is much philosophic comment upon nature study and human character, and upon the joys of gardening, such as only a thorough nature student and a well read and broad minded man could write. "In any case," says our author, "whatever the trade that fills our working days, a love of Nature will sweeten it. We have all met men and women who have given the best of themselves to the life of the open air, to helping the green things grow and watching the ways of beasts and birds. Such people, whatever their station, have a peculiar fragrance of character."

Those who, like Canon Raven, have the proper appreciation of Nature, will find great pleasure in reading his book and an American can gather much of the character of the British birds and the atmosphere of their haunts from perusing its pages.

The text is handsomely printed and it is profusely illustrated with reproductions of the author's photographs. These are all printed in sepia and many of them seem to us unfortunately hazy, possibly due to enlargement, although the effect is as if they were out of focus and they do not compare with the usual run of half-tone bird pictures of to-day.—W. S.

¹ *In Praise of Birds. Pictures of Bird Life. Described and Photographed by Charles E. Raven, D.D., Canon of Liverpool and Chaplain to the King. London, Martin Hopkinson & Co. Ltd., 14 Henrietta Street, Covent Garden, W. C. 2. 1925. pp. i-xiv + 1-148, pl. I-XLVIII. Price 14 shillings net.*

Miller and Griscom on New Central American Birds.—This paper is a "by-product" of the author's study of their collections from Nicaragua, upon which a memoir is under preparation.

The forms described belong to the genera, *Dendrocyx*, *Catharus*, *Turdus*, *Myadestes*, *Cyclarhis*, *Certhia*, *Vermivora*, and *Peucedramus*.

There is a review of the subspecies of *Peucedramus olivaceus*, in which five races are recognized, three of them being described as new. The name *P. o. arizonae* (p. 10) is proposed for the form entering the United States, true *olivaceus* proving to belong to the one inhabiting Vera Cruz.

Another review deals with the races of *Attila brasiliensis* of which no less than eleven are recognized, none of them new, however.

The authors fail to find any generic differences between *Oreothlypis* and *Vermivora* although they regard both as quite distinct from *Compsophylpis*.—W. S.

Todd on New Birds from Brazil and Guiana.²—Sixteen new forms of the genera *Thryophilus*, *Turdus*, *Lophotriccus*, *Euscarthmus*, *Sneathlagea*, *Taeniotriccus*, *Phylloscartes*, *Myiozetetes*, *Myioibius* and *Pipra*, are described. All are from the collections of Samuel M. Klages and all, with the exception of *Phylloscartes virescens*, from Brazil. The paper furnishes additional evidence of the almost inexhaustible stores of new "subspecies" still to be differentiated in the South American continent.

Mr. Todd has given adequate diagnoses in this paper with gratifying comparisons with related forms, the importance of which, as set forth in the "Correspondence" pages of the present number of "The Auk" by Dr. F. M. Chapman, we cannot too strongly emphasize.—W. S.

Mathews 'The Birds of Australia.' Since our last notice of this work³ Part 3 of Volume XII, has appeared completing the Honey-eaters (Meliphagidae) and describing the curious Friar-birds with their prominent helmets and naked cheeks. The few Australian species of Titlarks and Wag-tails are also considered leaving only about forty-five species to complete Mr. Mathews' great undertaking. The second part of the Bibliography⁴ has also appeared completing this important supplement, which we are glad to see may be secured independently of the main work.—W. S.

Recent Publications by Beebe. Two recent numbers of "Zoologia" published by the New York Zoological Society contain papers by William

¹ Notes on Central American Birds, with Descriptions of New Forms. By W. DeW. Miller and Ludlow Griscom. American Museum Novitates. No. 183. July 18, 1925. pp. 1-14.

² Sixteen New Birds from Brazil and Guiana. By W. E. Clyde Todd. Proc. Biological Society of Washington, Vol. 38, pp. 91-100. July 15, 1925.

³ The Birds of Australia. By Gregory M. Mathews. Vol. XII, Part 3, June 22, 1925.

⁴ Bibliography of the Birds of Australia. Part 2, June 22, 1925. Supplement No. 5 to The Birds of Australia.

Beebe on the natural history of Kartabo, British Guiana. One of these¹ is virtually a monograph of the Variegated Tinamou, *Crypturus variegatus variegatus*, covering its life history, plumage and molts, nesting, food habits and anatomy, with colored plates of the female in courtship attitude and of the downy chick. The paper forms an important contribution to the life history of one of the most interesting groups of South American birds.

The other contribution² deals but little with ornithology being entitled a study of a quarter of a square mile of tropical jungle at Kartabo. There is a consideration of the climate, physiography, water and earth of the region and a list of all of the groups of animals and the more important trees found there. In the great array of insects and other invertebrates, birds, although abundant, cut a comparatively small figure. There is a "Christmas Day list" made on December 27, 1920, in which 116 species are listed, also a comparison of the avifauna of Kartabo, 464 species, with that of New York with 330 species. There is also a list of various insects eaten by birds at Kartabo with the names of the species which devour them, and a breeding record with dates for the nesting of various species. The work well deserves the title carried at the top of each page "Ecology at Kartabo" and there is contained in it a vast amount of valuable data which will prove of value to workers in many fields.—W. S.

Grinnell on Introducing Alien Game Birds. Dr. Joseph Grinnell has given a timely warning³ against the possibilities of danger involved in the introduction of alien game birds into this country. His remarks were instigated by the proposed raising of Hungarian Partridges in captivity in California for the purpose of stocking the state with them. This plan he points out follows several unsuccessful attempts with this or other species, some 13,000 of which have been imported at a cost of \$50,000, with no permanent result. Should the proposed attempt prove successful, however, Dr. Grinnell points out that previous experience has shown conclusively that if two closely related species are forced to inhabit the same area one or the other will be crowded out and disappear and in this case it would be the native California Quail. Sportsmen cannot have them both and we agree with Dr. Grinnell that the native bird is infinitely preferable.

Furthermore, there is the constant danger of introducing some parasite which, while, perhaps, not particularly injurious to the introduced game bird may, play havoc with our native species, as has been the case with various introduced insects brought in on foreign plants. Finally, he voices a rather novel but perfectly logical argument that the wild life of the

¹ The Variegated Tinamou, *Crypturus variegatus variegatus*. By William Beebe. *Zoologica*, Vol. VI, No. 2, March 18, 1925.

² Studies of a Tropical Jungle. One Quarter of a Square Mile of Jungle at Kartabo, British Guiana. By William Beebe. March 11, 1925, *ibid.* No. 1.

³ Risks Incurred in the Introduction of Alien Game Birds. By Joseph Grinnell. *Science*, June 19, 1925, No. 1590, pp. 621-623. Reprint separately paged.

country belongs just as much to the nature lovers, which are everywhere increasing in numbers, as it does to the sportsmen, and that the latter have no right to jeopardize the native species of game birds without the approval of other bodies interested in them.—W. S.

Esten on Nest Studies. Mr. Esten has made an intensive study¹ of nests of a Towhee, Meadowlark and Rose-breasted Grosbeak and presents the results of his observations in tabular form with some additional comment. The data presented show the details of feeding, number of visits of each parent, time spent at the nest, excreta eaten and carried away, the feeding of the individual nestlings, the kind of food brought by the parents, etc. The vast amount of data presented in the small space of the tables is no less a valuable contribution to the life history of the species than an illustration of patient and painstaking observation.—W. S.

Kalmbach and McAtee's 'Homes for Birds.' This little pamphlet² is another bird box circular issued by the U. S. Biological Survey to meet the popular demand for information on this subject. It supercedes 'Bulletin 609 Bird Houses and How to Build Them,' the edition of which has apparently been exhausted and was probably never large enough to meet the needs of the country, a shortcoming of most Government publications of today. Messrs. Kalmbach and McAtee have compiled a very satisfactory Bulletin with short descriptions and illustrations of the simpler sorts of bird boxes suitable for a number of familiar species. The House Wren problem had not reached the Survey at the time this 'Bulletin' was prepared, so the usual provisions are made for the accomodation of this much discussed species. The famous cat trap of the Biological Survey is also fully described and this will prove of value to many who desire to quietly eliminate destructive felines.

The Survey has also published the usual 'Game Laws for the season 1925-26,' by George A. Lawyer, a pamphlet of 46 pages, which may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents per copy.—W. S.

Sun Brothers.³—This book differs from most collections of nature tales in that whatever the natural history, there is woven with it about an equal proportion of the sayings and doings of mankind. The joy of life and the glory of love are appreciated keenly by the author, but he glosses over none of the unpleasant realities which most of us forget as soon as possible. He tells the whole truth and the effect necessarily is sombre.

¹ A Comparative Study of the Nest Life of the Towhee, Meadowlark and Rose-breasted Grosbeak. By Sidney R. Esten. Proc. Indiana Academy of Science, Vol. 34, pp. 397-401, 1924 [1925].

² Homes for Birds. By E. R. Kalmbach and W. L. McAtee. Farmers' Bulletin No. 1456, July, 1925, pp. 1-22. Price 5 cts. per copy from the Supt. of Documents, Government Printing Office, Washington, D. C.

³ By Henry Williamson. E. P. Dutton & Co., New York, 1925, \$2.50.

The necessity of death to maintain life, the inevitable tragedy of life are brought out in every chapter, and the lesson is clear that man, in these respects, is one with his small brethren—although the play may be longer drawn out. Despite this kinship, man, who has at least the possibilities of thought and consideration, harries, maims, and destroys the wild things often at the very height of their loves, and seals the doom of the young for which they were so gallantly striving and sacrificing. The book should touch all hearts capable of sympathy and should help to bring about more tolerant and kindly relations between man and his Sun Brothers.

The scenes of the book are in southwestern England. Nine of the tales relate to mammals, seven to birds, one to a weed, and one to an unknown (a ghost that was a dream). They exhibit much ingenuity of plot, and evidence literary craftsmanship throughout. Unusual words seem a hobby of the writer, and a glossary of them would have been a help.—W. L. M.

The Buff-backed Egret (*Ardea ibis* L., Arabic *Abu Qerdan*) as a Factor in Egyptian Agriculture.¹—The paper named contains an exposition under the numerical system of the contents of the stomachs of 139 Buff-backed Egrets. The economic status of the various food items is discussed, an estimate made of the kind and quantity of food, and a balance sheet given of credit and debit food items of an individual of the species for the year. The paper is by an entomologist and was planned to prove the fallacy of Bonhote's statement² that crops to the value of two or three million pounds are saved by these birds in Egypt in one year is "enormously exaggerated." Having chosen his windmills the author soon emulates Don Quixote. While he considers "all indiscriminately predaceous insects as beneficial" (p. 17), he fails to apply the same criterion to the Egret as it so well deserves, and does not recognize the compensations there are for larger predators feeding on smaller ones. He credits predaceous insects and spiders as being beneficial although it is hard to understand how this can be under his criteria when their food must be drawn from the ranks of insects in general like those eaten by the Egret, most of which he gives some such annotation as "not known to be of economic importance," "not known to cause any appreciable damage," etc. If these things are true of the Egret's prey they are much more likely to be true of the smaller and less well known prey of the beetles and spiders. The Egret is debited with a considerable annual consumption of beneficial diptera, yet at the same time it is said of the disease carrying house fly, "the few millions destroyed by *Abu Qerdana* can hardly make any difference in the incredibly large fly population of the country" (p. 21). Nevertheless, he says that the Syrphus flies "are extremely beneficial insects, their larvae destroying immense

¹ Kirkpatrick, T. W. Bul. 56, Tech. & Sci. Service, Ministry of Agriculture, Egypt, 1925, 28 pp.

² Reviewed in The Auk, Vol. 40, No. 1, Jan. 1923, pp. 162-163.

numbers of Aphides" (p. 20). It is obvious we have to do with special pleading by one who has not had sufficient experience in food habit research to establish a proper perspective. On the whole we must abide by economic tendencies of groups, and for the sake of common fairness apply the same criteria throughout. On the face of the author's tabulations of food items the reviewer would reckon the Buff-backed as a voracious feeder, of preponderantly beneficial food habits. The note added to the title page (Recommended for publication by the Publication Committee of the Ministry of Agriculture, which is not, as a body, responsible for the opinions expressed herein), whether peculiar to this paper or not, is very well conceived.—W. L. M.

The Ornithological Journals.

Bird-Lore. XXVII, No. 4. July-August, 1925.

How a Family of Hermit Thrushes Came to Camp. By Henry A. Carey. With excellent photographic studies at Pocono Lake, Pa.

Bird-Life on an Oklahoma 'Oil Lease.' By Viahnett S. Martin.

Three Young Ospreys. By Fremont C. Peck.—With photographs.

"Those House Wrens." By S. Prentiss Baldwin.

The Solution of the Problem. By Allan Brooks.

Once More, the House Wren. By Mrs. Charles F. Weigle.

A Summer of Bluebird Tragedies. By Mrs. Arthur F. Gardner.

A Bit of Evidence. By Harriet C. Battell.

The House Wren: Pro and Con. By S. C. Swanson and Sons.—The six articles just listed present varied experiences with the House Wren, much of the evidence being at variance. Mr. Baldwin and Major Brooks come to quite different conclusions. The latter, curiously enough, while he believes in "interfering with the so-called balance of nature to the fullest extent by killing off all Crows, Magpies, squirrels, chipmunks, bird-killing Hawks and Owls and snakes," and puts House Wrens in the same category, does not destroy neighboring cats, mainly because he recognizes them as the best check on the white-footed mouse, "an inveterate enemy of birds and birds' nests." This view on the cat problem is so at variance with all that has been published by state and national conservationists and the practically universal experience of individuals, that we seem to be completely "up in the air" on the whole question. It is sincerely to be hoped that in our zeal to kill off such birds and mammals as each one of us feels he has convicted of some outrage, the entire fauna will not be wiped out. Personally we still endorse the views of the late Wm. Brewster, that a tract devoted to wild life conservation should be left as nature made it with no attempt by man to "improve" it, except to offset the changes that man himself has been responsible for. In the case of the Wren, as already stated, a check on promiscuous Wren boxes will probably adjust the matter.

Dr. A. A. Allen has an article on "Instinct and Intelligence in Birds" in the Audubon Society department and the Educational Leaflet by Dr. Pearson treats of the Water Turkey with a colored plate by Major Brooks.

An editorial discusses the question of common names, the writer calling attention to the fact that it is the common name that is the more stable and for that reason 'Bird-Lore' seldom uses scientific names. While we are in entire accord with this view it seems very important to use an authorized set of common names and we occasionally find 'Bird-Lore' using names which the reader will fail to find in the A. O. U. 'Check-List,' as for instance "Water Turkey" in the present issue—and contributors to 'The Auk' are also guilty! If Water Turkey is the more generally known name for this bird then it should be adopted in place of "Anhinga." We agree also that the eastern Robin and Song Sparrow should be so designated and not called simply "Robin" and "Song Sparrow" which terms belong quite as much to the western races. We doubt, however, whether anything would be gained by trying to apply "trinomial" nomenclature to the English names in such cases as Ward's Heron, which it is suggested should be known as "Ward's Great Blue Heron." If we are to change the common names every time we change the rank of a form from species to subspecies they will soon be no more stable than the technical names and Ward's Heron has a respectable literature and history under that name.

The Condor. XXVII, No. 4. July-August, 1925.

The Boom-Flight of the Pacific Nighthawk. By Alden H. Miller.—By throwing up a hat the bird was induced to dive close to the observer and it was found that the boom was produced by arching the wings downward at the bottom of the dive, the passage of the air through the wing feathers being undoubtedly the cause. So long as the wings were held sloping upward during the dive, as in ordinary flight, there was no boom.

The Winking of the Water Ouzel. By Charles W. Townsend.—Dr. Townsend here clearly shows that the generally held opinion that this bird winks with its nictitating membrane is erroneous. The wink is produced by the upper eyelid the edge of which is pure white.

Chendytes, a Diving Goose from the California Pleistocene. By Loyal Miller.—*Chendytes lawi* (p.).

Pelicans versus Fishes in Pyramid Lake. By E. Raymond Hall.—This is a most interesting and convincing study of the White Pelican colonies of Pyramid Lake. The author demonstrates that the Pelicans neither directly nor indirectly affect the trout supply of the lake. Popular sentiment to the contrary, and lack of protection to the birds, combined with the increasing popularity of the lake as a summer resort, will, he considers, in no great length of time, drive the Pelicans away. The decrease in the numbers of trout he shows is due to the reduction of the water supply in the Truckee River by irrigation and the lack of screens in the irrigation ditches to prevent the washing away of the young trout.

The First Bulletin of the Cooper Ornithological Club. By Joseph Grinnell.—A multigraphed sheet issued before the first printed publication.

A Revisionary Study of the Western Gull. By Donald R. Dickey and A. J. Van Rossem.—The form breeding on the coast islands from the

Farallons southward is described as *Larus occidentalis wymani* (p. 163) while the bird of the Gulf of California is *L. o. livens* Dwight. Curiously enough the authority for neither of the names *occidentalis* nor *livens* is mentioned anywhere in the paper, a rather serious omission is a "revisionary study."

A Report on the Birds of Northwestern Alaska and Regions Adjacent to Bering Strait. Part IV. By Alfred M. Bailey.

Oölogist. XLII, No. 7. July, 1925.

Some Impressions of the European Sylviidae. By James Bond.

Golden-winged Warbler Nests. By Horace O. Breen, Wakefield, Mass. —Continued in the August issue.

Mysteries of the Yellow Rail. By P. B. Peabody.—Breeding in North Dakota.

The Wilson Bulletin. XXXVII, No. 2. June, 1925.

Martins and Martin Houses. By T. H. Whitney.

Birds of Fulton County, Kentucky. By Dr. L. Otley Pindar.

Bulletin of the Essex County [Mass.] Ornithological Club. 1924.

Birds in their Relation to Changes in Vegetation. By Charles W. Townsend.

Ipswich River Bird Trip. By Ralph Lawson.—Ninety-one species seen May 17-18, 1924.

The Shooting Season of 1924. By J. C. Phillips.

A Pink-footed Goose Taken in Essex Co., Mass. By J. C. Phillips. [See Auk, 1925 p. 265.]

The Black Skimmer in Essex County, Mass. By S. G. Emilio.

Bird Banding by Club Members. By W. H. Ropes.

Annotated List of Birds Observed During 1924 by the Essex County Ornithological Club.

Numerous local notes.

The Cardinal. No. 6. July, 1925.

Some Inter-relations of Birds and Plants. By O. E. Jennings.

Wilson's Ohio River Journey.

Wilson's Pittsburgh Subscribers.

The Bird Collection of the Carnegie Museum. By W. E. C. Todd. With a photograph of the recently installed Blue Goose Group.

Bulletin of the Northeastern Bird Banding Association. I, No. 3. July, 1925.

A Modified Chardonnert Trap. By Richard B. Harding.

Notes on Measurements of Banded Birds. By G. D. Chamberlain.—There would seem to be many interesting possibilities in such work as this paper suggests but it is important that the investigator be familiar with what has been done before and apparently this author is not acquainted with Dr. Wetmore's notable researches in the line of bird tem-

peratures where much regarding thermometers and the relative value of temperatures of birds that are at rest and excited may be found. [Smithson. Misc. Collns. Vol. 72, No. 12, Dec. 1921.] We also wonder why he states so positively that the Robin is more highly organized than the Sparrows.

Notes on Swamp Sparrows. By Edward Gould Rowland.—This paper is devoted mainly to descriptions of variation in plumage but the descriptions are so meager that they are practically useless. It is a pity that the bander could not take time to write out accurate descriptions taking as a model these prepared by describers of new forms.

Notes on Plumage Changes of Male American Goldfinches. By C. L. and Helen Granger Whittle.—We have given much attention to the molt of this species and would regard the yellow patches on adult winter birds not as remains of the previous nuptial plumage, but as part of the winter plumage, some of the feathers of which have come in yellow ahead of time. We have seen such feathers in several species appearing one molt too soon if we may so express it.

The Gull. (Bulletin of the Audubon Society of the Pacific.) Contains many interesting local notes for the San Francisco region and the March and April issues have short papers on birds of the Yosemite and Tule River Canyon, by Carl R. Smith.

The Ibis. I, No. 3 (12th series). July, 1925.

On the Birds of North and Central Darfur, with Notes on the West Central Kordofan and North Nuba Province of British Sudan. (Part V.) By Hubert Lynes.—An excellent color plate of Savile's Bustard (*Lophotis savilei*).

The Bee-eater (*Merops apiaster*) from the Earliest Times, and a further Note on the Hoopoe. By Warren R. Dawson.—Both species are depicted in the tombs of Beni Hasan in Egypt. Many ancient writers attribute to the Bee-eater the habit of caring for its parents in their old age.

Lady (Elizabeth) Gwillim.—Artist and Ornithologist. By Casey A. Wood.—Account of a collection of paintings of Indian birds done in Madras about 1800 with some account of the artist, the wife of Sir Henry Gwillim.

May in Madeira. By R. Meinertzhagen. With a list of birds observed and photograph of the nest hole of Bulwer's Petrel.

Birds Observed in the East Somerset District, Cape Province, Union of South Africa. By H. W. James.—Annotated list of 125 species with descriptions of nests and eggs.

The Nesting of the Emerald Hummingbird (*Saucerottaea tobaci erythroneura*) in Trinidad. By A. L. Butler.—With photographs and a table showing weights of young from hatching until leaving the nest, 7.5 to 64 grains in 23 days!

The Nesting of *Nyctibius griseus* in Trinidad with Photographs by Alec Muir and some Remarks by A. L. Butler.—Remarkable photographs of

this peculiar bird, allied to our Whip-poor-will, which deposits its egg in a hollow on top of a small stub and sits in an elongated upright position with tail pressed against the trunk, looking exactly like a broken branch.

What is the True Relationship of Klaas' Cuckoo to *Chrysococcyx cupreus* and *Lamprocolius caprius*. By V. G. L. van Someren.—Considers it closely related to the former.

The Birds of Ladak. By B. B. Osmaston.—An annotated list of 94 species with map.

Bulletin of the British Ornithologists' Club. CCXVCII, May 30, 1925.

A plan is described to purchase, as a permanent bird reserve, Dungeness, a famous tract on the Kentish coast directly opposite to Boulonge, notable for its interesting fauna and flora, and which is now on the market.

Mr. Stuart Baker describes *Sturnopastor capensis dehrae* (p. 103) and reviews the other races.

Mr. N. B. Kinnear describes *Tephrodornis gularis latouchei* (p. 105) from Fohkien and *Pyrotrogon erythrocephalus intermedius* (p. 105) from Tonkin.

Dr. Percy Lowe has a description of a new *Puffinus*—*P. pacificus whitneyi* (p. 106) from Fiji.

Bulletin of the British Ornithologists' Club. CCXCVIII. July 31, 1925.

Mr. H. Kirke Swann discusses the Tawny Eagle (*Aquila rapax cullenii*).

Mr. A. L. Butler exhibited a series of six specimens of the rare Hummingbird, *Loddigesia mirabilis*, describing its characters and history.

British Birds. XIX, No. 1. June, 1925.

Turnstones on a Baltic Islet. By Ralph Chislett.—An account of their nesting on Öland with very fine photographs of the birds standing at rest and incubating.

British Birds. XIX, No. 2. July, 1925.

The Migration of the Woodcock. By Jacob Schenk.—Abstract of a paper in German in 'Aquila' 1924. An interesting contribution to the study of migration. The author believes that routes correspond only to present day geographical conditions; and that orientation is of two kinds, a faculty for taking and holding a constant general direction, and a faculty for following coast lines. He contends too, that a bird knows from experience the warm and cold portions of its range and migrates with a knowledge of the direction in which the warm region lies.

Notes on the Courting Display and Nesting of the Eider in the Tay Estuary. By H. Boase.

British Birds. XIX, No. 3. August, 1925.

Field Notes from Cumberland. By R. H. Brown.

Nestlings of Some Rare British Birds. By H. F. Witherby.—Supplementary to his 'Handbook of British Birds.'

Avicultural Magazine. (4th series.) III, No. 5. May, 1925.

General articles on the Timaliidae, Titmice, and Shrikes.

A record of the Tinamous bred in captivity—six species.

Avicultural Magazine. III, No. 6, June, 1925.

General articles on the Prionopidae, Artamidae, Wax-wings and Vireos.

Donaldson's Turacou. By D. Seth Smith.

Duck Breeding in 1924 at Dareham. By Hugh Wormald.

Avicultural Magazine. III, No. 7, July, 1925.

General articles on Pittas, Chatterers, Tyrants, etc.

The Blue-winged Goose of Abyssinia. By F. E. Blaauw.

The Argus Pheasant and its Display. By D. Seth Smith.—With four remarkable photographs.

Avicultural Magazine. III, No. 8. August, 1925.

General articles on Woodpeckers and Wrynecks.

The Oölogical Record. V, No. 2. June, 1925.

Photographs of the nests of several shore-birds in Alberta. By T. E. Randall.

On the Nesting of *Surnia ulula* caparoch. By W. R[owan ?].

Bird Notes and News. XI, No. 6. Summer, 1925.

Contains an interesting review of the oil problem in England and the efforts to save the sea birds from its disastrous effects.

The Emu. XXIV, Part 4. April, 1925.

Notes on the Birds observed during the Queensland Congress and Campout, 1924 [of the R. A. O. U.]. By H. Wolstenholme.

A Review of the Bird Life on Coomoooboolaroo Station, Duaringa District, Queensland, during the past fifty years. By C. A. and H. G. Barnard.

Bird Notes from Willis Island. B. J. Hogan.

Birds of the Wairarapa Plains. By Robert H. D. Stidolph.

Some Rare Birds in Tasmania. By H. Stuart Dove.

Birds of a New South Wales Garden. By H. V. Edwards.

Notes on Two Pigeons of the Genus *Globicera*. By J. R. Kinghorn.

Birds Observed at Burketown, North Queensland. By A. E. Church.

A Method of Obtaining Series of Bird Pictures. By P. A. Gilbert.

South Australian Ornithologist. VIII, Part 3. July, 1925.

A Trip to the Coorong. By J. Sutton.

Revue Francaise d'Ornithologie. 17, No. 195. July, 1925. [In French.]

The Alpine Titmouse. By H. Jouard.—Continued in June and July.

Revue Francaise d'Ornithologie. 17, No. 194. June, 1925. [In French.]

On the Cuckoo. A Reply. By A. Burdet.

The Original Diagnosis of *Oenanthe chaboti*. By MM. Menegaux and Berlioz.

Revue Francaise d'Ornithologie. 17, No. 195. July, 1925. [In French.]

The Return to the Nest. By Rene d'Abadie.—By means of banding he found that the Swallows (*Hirundo rustica*) returned to the same nesting colony in successive years but were usually remated to other individuals, almost exactly what Baldwin has demonstrated in the case of our House Wrens.

L'Oiseau. VI, No. 1. January, 1925. [In French.]

Notes on the Birds of Canada. By J. Berlioz.

Twelve New Birds from Indo-China and Notes on some Pheasants of Annam. By J. Delacour and P. Jabouille.—Illustrated by six colored plates from their recent work on the birds of Annam.

L'Oiseau. VI, No. 2. February, 1925. [In French.]

A Journey to South Algeria. By C. Arnault.

L'Oiseau. VI, No. 4. April, 1925. [In French.]

Observed phenomena in a *Buteo ferox* with injuries to the semicircular canals. By MM. Mouquet and Girard.

Proceedings of the Netherlands Ornithological Club. 15, Afl. 1. May, 1925. [In Dutch].

Anatidae of the Netherlands.

Norsk Ornithologisk Tidsskrift. VI, 1925-26. [In Norwegian.]

Norwegian Gulls. By A. L. Schioler.

Bibliography of Norwegian Ornithology 1591-1924. By H. Tho. L. Schaanning.—A remarkably full and well prepared list.

Ornithologische Monatsberichte. 33, No. 4. July-August, 1925. [In German.]

On the Northern Flight of Wild Geese in the vicinity of Vienna in the winter of 1924-1925. By O. Reiser.

Nest Building by the Male in *Sylvia curruca*. By G. von Schweppenburg.

The Systematic Arrangement of the Nuthatches. By E. Stresemann.

The Bird Nest Grotto of Tamaloesang, Borneo. By G. L. Tichelman.

Ornithological Notes from Crete. By Gindo Schiebel.

Journal für Ornithologie. LXXIII, No. 3. July, 1925. [In German.]

The Structure of Iridescent Feathers. By Theodor Elsässer.—An exhaustive treatise on the subject.

On *Oenanthe xanthoprymora*. By M. Härms.

Critical Arrangement of the Swedish Avifauna. By O. Graf Zedlitz. Experiments in the Loss of Pigment in Turacous. By Ingo Krumbiegel. A Contribution to our Knowledge of the Avifauna of Nova Zemla. By A. von Jordans.

Proceedings of the Ornithological Society of Bavaria. XVI, No. 2. November, 1924. [In German.]

Chaffinch Studies. By J. Gengler.—With a map.

Conspicuous of the Genera of Kingfishers. By A. Laubmann.—An alphabetical list with types and method of designation.

Ornithological Notes from Lower Vintschgau. By B. Hoffmann.—Mainly devoted to song records.

Order of Molt of the primaries in Kingfishers. By A. Laubmann.—*Halcyon smyrnensis*.

'Anzeiger' of the Bavarian Ornithological Society. No. 9, April, 1925. [In German.]

C. E. Hellmayr describes *Myiarchus cephalotes caribaeus* (p. 73) Galepan, Venezuela.

A. Laubmann describes *Alcedo semitorquata heuglini* (p. 74) Dire Daoua, Abyssinia.

Ornithologische Beobachter. XXII, No. 6. March, 1925. [In German and French.]

An Excursion into Algeria. By A. Mathey-Dupraz.

Ornithologische Beobachter. XXII, No. 7. April, 1925. [In German and French.]

Red-necked Grebe and Gallinule.—By W. Siegfried.—Good photographs of birds at their nests.

In this and other numbers are many local items, records of bird banding, etc.

Contributions to the Development of Birds. I, No. 6. July, 1925. [In German.]

Bastard eggs. By A. Szulasko.

Many oölogical notes.

Aquila. 1924. [In Hungarian and German.]

Unsolved Problems in Ornithology. By Titus Csörgey.

The Migration of the Woodcock in Europe. By Jacob Schenk. (See ante p. 608).—This is the complete paper in German and Hungarian.

On Bird Migration Routes at Heligoland. By H. Weigold.

Hungarian Bird Banding in 1923. By J. Schenk.

Bird Migration Dates in Hungary. By Koloman Warga.

On the Food of Hungarian Hawks and Owls. By E. Greschik.

CORRESPONDENCE.

A Plea for the Evidence.

Editor of 'The Auk':

It is undeniable that the value of any conclusion depends primarily upon the nature and extent of the evidence from which it is drawn. This is no less true in science than in law. The counsel who asserted the innocence of his client but withheld the grounds for his belief would doubtless lose his case. The physicist or biologist who advanced an original theory but refused to present the data on which it was based would not be taken seriously.

Why then should not the systematic zoölogist support his opinion by presenting the evidence on which it rests? "A" describes a new race and in a line or two tells us it is paler or darker, larger or smaller than some other, gives one set of measurements, names a type, and a form is born to live forever in nomenclature.

The describer does not tell us whether he had more than one specimen of the proposed new bird, he makes no mention of comparison with topotypical examples of allied races, in short, he withholds his evidence. In this day of fine "splitting," when the ascribed differences are often within the range of individual variation, the importance of adding to the diagnosis of a new form, a list of the "Specimens Examined" is too obvious to require comment. Many systematists indeed follow this admirable method but there is a regrettably large number who do not employ it. It is to them I address this plea to follow a procedure which will increase the value of their labors, do justice to themselves, and add credit to the technique of descriptive zoölogy.

Lest I be accused of undue discrimination I am sending this letter to 'The Ibis' as well as to 'The Auk.'

Yours sincerely,

FRANK M. CHAPMAN.

American Museum of
Natural History New York City,
July 6, 1925.

"Out of Print"

Editor of 'The Auk':

A disappointing thing to the new generation is to know that many of the supremely good and valuable classics in ornithological literature will probably never be available to them. If the writer were able to do so, he would consider going into the publishing business for the sole purpose of specializing in the republishing of out of print works, which should be continually available to newcomers in ornithology. Could not some publishing house make a financial success of a republishing of the text of Audubon in a good form, when bird students and others interested number many times more now than formerly, as is indicated by the

surprisingly large amount of literature on birds and other nature subjects which is sold at present; and when a reading public shows its interest by listing Beebe's 'Galapagos,' Thompson's 'Outline of Science,' and other similar works, among its leading sellers in non-fiction? One wonders whether a canvass among the subscribers to the ornithological magazines, and also among others, to get an approximate idea of the demand for it, might not tempt some publisher to undertake it.

It is also disappointing to learn that excellent works of very recent date are no longer available. An outstanding example of this is a well known and much desired National Museum Bulletin on the diving birds, published just so recently as 1919; not to mention many others just as desirable, published before and even since. This condition is made still more acute by learning of certain works, of which only a few copies were printed; or even that certain works were printed chiefly for private distribution.

It seems very desirable that editions of valuable works, which so soon become as scarce as Heath Hens and Whooping Cranes, or even Wild Pigeons, should be larger than they often are, and that periodical re-issues should be made to meet new demands for them.

The same may be said of those mines of information, the ornithological magazines, complete files of which are no longer obtainable for newcomers in this field of interest. Would that somehow it were possible to have a reprinting of these.

If promise of financial success in such matters does not attract private enterprise, many hearts would be glad, I am sure, to hear sometime that some of our institutions for the dissemination of knowledge, or our governments, would include these masterpieces in their printing programs.

Yours Truly

Denver, Pennsylvania.

CLIFFORD MARBURGER.

NOTES AND NEWS.

JOHN HALL SAGE, Ex-president, Secretary for 28 years, and Life Fellow of the Union elected at the first meeting, died in the Massachusetts General Hospital in Boston, August 16, 1925. He was spending his vacation at a camp in the Maine woods when he was taken suddenly ill and was brought to Boston where he underwent an operation for kidney trouble and a few days later passed away. At the time of his death he was in his 79th year, having been born in Portland, Connecticut, April 20, 1847.

He was the son of Charles Henry and Eliza Hall Sage. His education was received in the common and high schools of Portland and Bridgeport, Conn., and later the honorary degree of Master of Science was conferred on him by Trinity College, Hartford. At the age of 26 he entered the service of the First National Bank of Portland with which he was associated during the rest of his life. He filled various positions serving as

President for a number of years and recently as Chairman of the Board of Directors. He was also Treasurer of the Freestone Savings Bank up to the time it was merged with the recently organized Portland Trust Co.

With W. W. Coe, a business associate of Portland who died in 1885, Sage became much interested in birds and began to publish his observations made in the field. His first paper on local birds was apparently a contribution to the Middletown, Conn., 'Constitution' in 1878, entitled 'Birds of the Garden and Orchard.' From that time on for 47 years he continued to publish on various subjects connected with birds. His bibliography contains upwards of 100 titles comprising more than 70 notes and papers on the birds of Connecticut, a series of 28 annual reports as Secretary of the Union, a number of obituary notices and miscellaneous notes, and his two main works 'Memorials and Other Gifts in Trinity Church, Portland, Conn.,' 1910, and with Dr. Louis B. Bishop, 'The Birds of Connecticut,' 1913. This last work is a volume of 370 pages published by the State Geological and Natural History Survey and contains a catalogue of 334 species in which is incorporated a summary of Sage's 45 and Bishop's 30 years work in the field. In the words of an eminent reviewer it is "a thoroughly up-to-date and well prepared state list and a contribution to ornithological literature of which the authors may well feel proud."

In the intervals of an active business life Sage found time to bring together a valuable collection of birds rich in specimens of local interest and representatives of the birds of prey. His interest in natural history extended to other branches besides ornithology and particularly to botany, and he was well acquainted with the local flora. His broad interest in scientific work is shown by his membership in various organizations. He was a Fellow of the American Association for the Advancement of Science, the Connecticut Botanical Society, the Connecticut Historical Society, the New York Academy of Sciences, the Linnaean Society of New York, the Biological Society of Washington, the Cooper Ornithological Club and the Wilson Ornithological Club. He was deeply interested in bird protection and took a prominent part in the early activities of Audubon work both State and National.

John H. Sage was not only a life fellow and officer but he was an essential part of the American Ornithologists' Union. Elected at the first congress in 1883 he had an almost unbroken record of attendance at the meetings, and more than any other member, except the late J. A. Allen, he contributed freely of his time and energy to the success of the organization. His published reports of the meetings contain the history of the Union for two-thirds of its existence. During the years he acted as Secretary he devoted his vacations largely to the Union in preparing for and attending the meetings. As an officer he maintained a high standard of service. Always prompt, affable and efficient he would endure almost any fatigue and inconvenience to perform his duties even to writing up his minutes of the meetings long after midnight. He kept the records

with scrupulous care and the minutes were all written by himself in a clear, legible hand. Though he excelled in the amount of hard work and drudgery which he cheerfully performed for the Union he yielded to none in the amount of real pleasure which he derived from the meetings. He thoroughly enjoyed making the acquaintance of new members, taking part in reunions with old, and attending the excursions whenever possible. He took a deep interest in visiting historic spots and the various places included in the two trips of the A. O. U. to the Pacific Coast. When in recognition of his long and faithful service as Secretary, the Union elevated him to the office of President, he still continued to assist his successor in various ways and acted as custodian of the archives. During his presidency the Union showed a substantial growth both in membership and permanent funds, and after his retirement he continued as Chairman of the Board of Investment Trustees and Member of the Council. His last contribution to 'The Auk,' a notice of his life-long friend Robert O. Morris, appeared only a few weeks before his death.

The biographer who judges the work of John H. Sage by his business activities, the extent of his bibliography, or the nature of his publications will strike wide of the mark unless he takes into consideration the caliber of the man himself. Quiet, modest, unassuming, he nevertheless had a well developed sense of humor and could always appreciate a joke. He possessed all the sturdy qualities of New England character which made him a leader in business, church and scientific circles of his community, and through these same qualities he became widely known in his native state and one of the best known and highly respected members of the Union. His contribution to ornithology was not so much what he published as what he accomplished through his long continued and self sacrificing work for the Union. No higher tribute can be paid him than one he once paid to a friend that "in his death the world has lost a man who daily made it better."

In accordance with custom a formal Memorial of his life and work will be presented at a regular Stated Meeting of the Union.—T. S. P.

DR. ARTHUR GARDINER BUTLER, a Corresponding Fellow of the Union, elected in 1922, died at his home in Beckenham, Kent, England, May 28, 1925, at the age of nearly 81. He was the son of Thomas Butler, formerly Assistant Secretary to the Principal Librarian of the the British Museum, and was born at Cheyne-Walkin Chelsea, England, June 27, 1844. He was educated at St. Paul's School and spent one year at the Art School at South Kensington. From early youth he took an interest in natural history, especially in entomology, and at the age of 19 entered the British Museum as a systematic entomologist under Dr. John Edward Gray. In 1879 he was appointed Assistant Keeper of Zoölogy, a position which he held until he retired in 1901. Most of his time while in the British Museum was devoted to the study of exotic butterflies and moths of which he described and named several thousand.

Dr. Butler was a keen student of British birds and was also much interested in foreign cage birds, a hobby to which he devoted much attention—especially in his later years. He was a contributor to 'The Avicultural Magazine' from its establishment until his death. His best known work was probably his 'Foreign Finches in Captivity,' illustrated by Frohawk, 1894-96. He also published 'British Birds Eggs,' 1885-86; 'British Birds with their Nests and Eggs,' in six volumes, 1896-99; 'Foreign Bird Keeping,' 1899-1900; 'Birds' Eggs of the British Isles,' 1904; and 'Birds of Great Britain and Ireland, Passeres,' in two volumes, 1907-08, the last a reprint with additions of the first two volumes of the work issued in 1896-99. His most recent book on cage birds was entitled 'Foreign Birds for Cage and Aviary,' 1910.

He was a Fellow of the Entomological, Linnaean, and Zoological Societies, a Member of the British Ornithologists' Union, and an Original Member of the Avicultural Society which he also served as a member of the council and Honorary Secretary.—T. S. P.

HENRY WORTHINGTON OLDS, better known as **HENRY OLDS**, an Associate of the American Ornithologists' Union since 1896, died at Petersburg, N. Y., January 20, 1925, after a brief illness. He was born in Washington, D. C., March 26, 1859. His education was received in the public schools of that city and in the Columbia Law School, now the Law School of George Washington University. At the age of 18 he entered the Government service in the Sixth Auditor's office and in 1899 was transferred to the Biological Survey in the Department of Agriculture, where he remained until 1912 when he resigned to take up lecturing. Shortly after the outbreak of the World War he went to Paris as an auditor for the War Department, but after a few months resigned to enter Y. M. C. A. work and in this capacity he made a trip to Warsaw, Poland.

In addition to his association with the Union he was a Corresponding Member of the Royal Hungarian Bureau of Ornithology and a member of the Biological Society of Washington. He was one of the founders of the Audubon Society of the District of Columbia and always took an active part in bird protective work. After his retirement from the Department he spent some time each year for several years lecturing for the National Association of Audubon Societies. He prepared and edited 'Current Items of Interest,' an occasional publication of the local Audubon Society issued in 38 numbers from 1908 to 1918. While with the Biological Survey he assisted in the preparation of the annual summaries of the game laws and published several articles on bird protection, the more important of which appeared in the Yearbooks of the Department on 'Audubon Societies in Relation to the Farmer,' 1902; 'Cage-Bird Traffic of the United States,' 1906; and 'Introduction of the Hungarian Partridge into the United States,' 1909. He was also author of a Farmers' Bulletin on 'Pheasant Raising in the United States,' 1910.

Henry Oldys had considerable musical talent and when he became

interested in ornithology naturally devoted his attention to bird song. He had a very keen ear for bird notes and could distinguish the individual variations in the songs of various birds. He was fond of noting these peculiarities and had recorded more than 40 variations in the song of the Carolina Wren. He was a ready writer, fond of travel and lecturing, and it was only natural that after his retirement he should devote his energies largely to lecturing and literary work. It had long been his intention to publish a book on bird song, but he utilized the material in his lectures, and up to the time of his death had only published a few articles on the subject in 'The Auk' and elsewhere.

Oldys was a good conversationalist, sociable, always cheerful, and a decided optimist. He took an active interest in legislation to restrict the traffic in plumage and was one of the first, if not the first, to suggest including in the Tariff Act, a provision prohibiting the importation of plumage, a proposal which at the time was considered Utopian but which became a reality in 1913.—T. S. P.

RICHARD HUNT, an Associate Member of the Union since 1918, died at the home of his parents near Boston, June 25, 1925. He was born at Winchester, Massachusetts, October 17, 1886. His early education involved attendance at the Winchester High School, 1901-05. Subsequently he attended Dartmouth College, 1905-06, and then Harvard University, taking his A.B. degree there in 1909.

After several years in business positions Hunt's deep interest in natural history began to assert itself overwhelmingly. He had begun collecting birds and studying bird song in Massachusetts about 1905. By 1917 he had made up his mind that here lay the field of interest which should claim his permanent attention. While he was casting about for congenial association, his qualifications and desires became known to the Director of the Museum of Vertebrate Zoölogy, University of California; and in December, 1917, he was called to a temporary position in that institution. He received a permanent appointment as Assistant Curator of Birds on May 21, 1918, and he held this position, barring a leave of absence for special study at Stanford University in 1922-23, until the date of his death.

Hunt was possessed of certain faculties of mind that made his services invaluable in the institution with which he associated himself heart and soul. He had the "museum conscience"; ingrained within him was the instinct for orderliness combined with accuracy; in the handling of the research materials in his charge, he was alert to see and to hunt out errors and instantly to make the corrections needed.

In the field, Hunt was not so much of a collector as an observer; and his observations centered themselves upon the bird as a living thing and particularly as a vocalist. His field notebooks, now filed in the Museum of Vertebrate Zoölogy, are replete with observations that attest to his keen powers of analyzing and recording what he saw and heard.

A total of nine published articles of an ornithological nature were

contributed by Hunt, all to 'The Condor.' Most of these pertained to the subject of bird song. From the start of his work at Berkeley, he expressed himself as dissatisfied with any of the systems proposed for either the graphical or musical records of bird voices. He felt that some better method was yet to be developed. The most notable of his articles was the last one printed, in 'The Condor' (Vol. 25, November, 1923, pp. 202-208), entitled 'The Phonetics of Bird-sound.' In this article Hunt set forth "a more standardized method of hearing and recording bird utterances" than he thought had previously been proposed. The basis of the method lies in the concept that bird voice is not so essentially musical as it is human speech-like. On this principle, Hunt proposed the designation of bird voices in letters of the alphabet, the sounds being much as are employed in the pronunciation of human "words." This principle is undoubtedly, to the writer's mind, valid both theoretically and in application. And the future development of bird voice study will, we believe, bring out in true measure the lasting value of Richard Hunt's contribution in that field of ornithology.—J. GRINNELL.

MRS. SARA ANDERSON HUBBARD, an Associate of the A. O. U. for nearly 27 years, from 1891 to 1918, died in Brooklyn, New York, July 31, 1918, at the advanced age of nearly 86. Although seven years have passed since her death, no notice of her work has thus far appeared in 'The Auk,' and it seems important to place on record her contribution to the study of birds. She was born in East Berkshire, Franklin County, Vt., September 7, 1832, and was the daughter of David B. and Selena (Anderson) Blakeley. After receiving her education at the Ladies' Seminary in Newark, New York, she married James M. Hubbard, in 1853.

Mrs. Hubbard was engaged in teaching and journalism for many years and was the author of 'Catch Words of Cheer' in three series, the first of which appeared in 1900, the 'Religion of Cheerfulness,' 1906, the 'Duty of Being Beautiful' and the 'Soul in a Flower.' Unfortunately, comparatively few of the members of the Union knew her personally, and as she did not contribute to the pages of 'The Auk' the importance of her work was not generally appreciated. How or when she became interested in birds is uncertain, but of her enthusiasm and ability to impart it to others there is at least one striking illustration in the case of Mrs. Olive Thorne Miller, as described by Mrs. F. M. Bailey in 'The Auk' for 1919, pp. 165-166. In 1881, while in Brooklyn, N. Y., Mrs. Hubbard succeeded in interesting Mrs. Miller in observing birds. "My friend [says Mrs. Miller] was an enthusiast and I found her enthusiasm contagious. She taught me to know a few birds * * * and indeed before she left me I became so interested in the Catbird and Thrush that I continued to visit the park to see them, and after about two summers' study the thought one day came to me that I had seen some things that other people might be interested in. I wrote what I had observed and sent an article to the 'Atlantic Monthly' and it was accepted with a very precious letter

from Mr. Scudder who was then editor." With that visit and the interest aroused in birds observed in Prospect Park began Mrs. Miller's work which afterwards found expression in 11 popular works on birds and their habits.

In reality, Mrs. Hubbard was one of the pioneer nature teachers and popular observers of birds, a member of that group which included John Burroughs, Olive Thorne Miller, Bradford Torrey and others. While she herself did not publish much on birds, she carried the message to others and inspired them in a way which often produced far-reaching results. Too much credit can hardly be given those pioneers who in the closing years of the 19th century gave a new impetus to popular bird study in the field.—T. S. P.

COL. HARRY COUPLAND BENSON, U. S. A., Retired, a former Associate of the A. O. U. from 1886 to 1894, died at Letterman General Hospital, at the Presidio, San Francisco, September 21, 1924, after an illness of several months. He was nearly 67 years of age having been born at Gambier, Ohio, December 8, 1857.

He graduated from Kenyon College, Ohio, in 1877, where his father, Rev. Edward C. Benson, was Professor of Latin and where ten years later he received the degree of A.M. Benson entered the U. S. Military Academy at West Point, July 1, 1878, graduated with the Class of '82, and was commissioned a 2d Lieutenant in the First Artillery. He was transferred to the 4th Cavalry, Jan. 31, 1884, and remained in that branch of the service during the rest of his military career. He was promoted to 1st Lieutenant in 1888, Captain in 1897, Major in 1905, Lieutenant-Colonel in 1911, Colonel in 1914 and retired at his own request after 30 years service in 1915.

Upon his transfer to the cavalry in 1884 Lieut. Benson was detailed to Fort Huachuca, Arizona, and took part in the campaign against Geronimo. It was during the years that he was stationed at this post that he took an active interest in ornithology and became associated with the Union, evidently due to the fact that he was in correspondence with Capt. Charles E. Bendire for whom he collected many nests and eggs. Apparently he published nothing on birds over his own name, but his notes were quoted and some of his specimens figured in Bendire's 'Life Histories of North American Birds.' Thus his observations on the Masked Bobwhite, Band-tailed Pigeon, Mexican Black Hawk, Aplomado Falcon, White-Necked Raven and other species were placed on record and his name was added to the list of the early field collectors of Arizona.

In 1891, Benson was detailed to California and much of the time during the next 20 years was connected with the administration of National Parks. In 1891 and 1892 he was stationed in the Sequoia National Park, in 1895-1897, 1899, and in 1905-1908, in Yosemite, and from November 28, 1908, to September 29, 1910, in the Yellowstone. In 1897, he had been made Captain and when he returned to Yosemite in 1905, it was as Acting

Superintendent. His Park service is described at length by F. P. Farquhar in a sketch of his life, accompanied by an excellent portrait, in the 'Sierra Club Bulletin,' XH, pp. 175-179, 1925. Benson's careful field work in the southwest is commemorated in the name of a partridge *Callipepla elegans bensonii* and his service in Yosemite in Benson Lake, a beautiful bit of water in the High Sierra in the heart of the Park which was for several years the scene of his labors.—T. S. P.

JAMES BRITTON PURDY, an Associate of the Union since 1893, died June 2, 1925, at his home near Plymouth, Wayne County, Mich. His death occurred on the farm where he was born and which his father, James Purdy, a personal friend of Alexander Wilson, acquired as a homestead from the Government, nearly 100 years ago. Here the son, James Britton, was born June 23, 1843, and attended the village school in Plymouth at a time when Michigan was largely a wilderness. At the age of 21 he enlisted in the 24th Michigan Volunteer Infantry and served until the close of the Civil War. In 1867 he married Hannah E. Phelps of Eaton Rapids and they had two children.

According to his daughter, Mrs. Nettie L. Moore, the only survivor of the family, young Purdy showed an interest in nature at an early age by his fondness for pets and his love of bird life. His collection of birds began with a Great Horned Owl mounted by a friend from whom he learned the elements of taxidermy. Gradually he brought together a general natural history collection which included in addition to mammals, big game heads, horns, and other specimens, about 180 mounted birds and some 1400 eggs representing several hundred species. He took great pride in this collection and the condition of the specimens and discarded those which did not come up to his standard.

Purdy was a member of the Michigan Ornithological Club as well as of the A. O. U., cooperated in making observations on bird migration, and contributed notes and observations to Cook's 'Birds of Michigan,' 1893.

His publications deal mainly with the occurrence, habits or rarity of Michigan birds and appeared chiefly in the 'Ornithologist and Oölogist,' 'Bulletin of the Michigan Ornithological Club,' and occasionally in 'The Auk.'

One interesting article which he contributed to 'The Auk' for 1895 contains a brief account of the Duncans who were relatives of Alexander Wilson. William Duncan came to America with his uncle Alexander Wilson and was followed shortly after by his widowed mother Mrs. Alexander Duncan, Wilson's sister, and several younger children. Alexander Duncan, the second son, settled near South Lyon, Mich., and became a life-long friend of Purdy's father.

Although he lived to the advanced age of nearly 82, he never lost his interest in birds. Purdy's declining years were saddened by the death of his wife in 1916, and that of his son in 1924, together with the gradual loss of his sight, resulting in almost total blindness shortly before his final

illness. Known personally, or by correspondence, to most bird students in Michigan, through his natural history work and his observations, James B. Purdy, one of the pioneer workers in the state, was associated with the past as well as the present generation of ornithologists.—T. S. P.

THE GERMAN ORNITHOLOGICAL SOCIETY is holding its seventy-fifth anniversary meeting October 3-6, 1925, at Berlin.

At the opening session addresses will be made by President von Lucanus and the Secretary Dr. Stresemann. On the following days an interesting program of papers has been arranged on which appear the names of the leading German ornithologists as well as Dr. Hartert of Tring, England and Mr. Bengt Berg of Kalmar, Sweden.

DR. ALEXANDER WETMORE, Vice-President of the A. O. U., who succeeded the late Ned Hollister as Director of the National Zoological Park, has been appointed Assistant Secretary of the Smithsonian Institution. This was the post at one time held by Prof. Spencer F. Baird and it is gratifying to find history repeating itself and a leading ornithologist holding this important office.

IT is high time for all members, of the A. O. U., of every class, to prepare to attend the stated meeting at New York City, November 10-12, 1925. November 9 will be devoted to business sessions of the Council, Fellows and Members, while the scientific sessions begin on November 10. It is important that everyone who can possibly attend should be present. The success of the Union and the satisfactory progress of ornithology depends upon the active interest of the members. Those who have attended before, hardly need to be urged, and those who have not, do not realize what they have missed. We trust that a large number of the latter will make their first acquaintance with an A. O. U. meeting next month.



INDEX TO VOLUME XLII.

[New generic, specific and subspecific names are printed in heavy face type.]

ABALIUS, 149.
Abeillia, 295.
Acanthopneuste, 356.
Accipiter cooperi, 145, 409, 534, 545.
 velox, 65, 409, 534.
Acridotheres tristis, 160.
Actitis macularia, 59, 65, 230, 408,
 531, 580, 581, 582
Aehtiopsar cristatellus, 159.
Aethopyga dabryi bangsi, 291.
Africa, birds of, 296, 454.
Agelaius phoeniceus fortis, 62.
 p. phoeniceus, 67, 412.
 p. richmondi, 550.
Ahrens, T. G., the ornithological
collection of the Berlin Museum,
241-245.
Aix sponsa, 41-50, 407, 573.
Ajaia ajaja, 524, 540.
Alabama, birds of, 147.
Alaska, birds of, 270.
Alauda, 357.
Alcedo semitoquata heuglini, 611.
Allen, Arthur A., review of his
‘Birds and Bird Lore,’ 287.
Allert, Oscar P., Northern Pileated
Woodpecker in Clayton Co.,
Iowa, 269; unusual nesting of a
Robin, 278.
American Ornithologists’ Union,
forty-second stated meeting of
the, 105-120, forty-third stated
meeting, 310, 484, 621; list of de-
ceased members, 307.
Ammodramus savannarum australis, 412.
 s. bimaculatus, 63.
Ammomanes deserti intermedia,
300.
 d. payni, 299.
Amoromyza, 450.
Amphispiza bilineata bilineata, 551.
Anas fulvigula maculosa, 521, 540.
 maxima, 263.
 platyrhynchos, 56, 407, 521,
 571.
 rubripes, 572.
 r. tristis, 407.
Andrews, E. A., birds’ nests at
home, 217-230.
Anhinga anhinga, 520, 539.
Ani, Groove-billed, 546.
Annam, birds of, 458.
Anser albifrons gambeli, 523, 577.
 brachyrhynchus, 265.
Anthus rubescens, 417.
Antrostomus carolinensis, 411.
 vociferus vociferus 66, 70, 411.
Aptosochromatism, 238.
‘Aquila,’ reviewed, 611.
Aquila chrysaetos, 443, 536.
 pomarina, 383.
Aramus elucus, 296.
 carau, 296.
 dolosus, 296.
 holostictus, 296.
 pictus, 296.
 scolopaceus, 296.
 vociferus, 296, 527.
Aratinga holochlora holochlora, 132.
Archibuteo ferrugineus, 536.
 lagopus, 382.
 l. sancti-johannis, 280.
Archilochus alexandri, 547.
 colubris, 411, 547.
 platycercus, 588.
Arctonetta, 49.
‘Ardea,’ reviewed, 165.
Ardea, 471.
 canadensis, 120.

Ardea cinerea, 364.
 herodias herodias, 58, 65, 128,
 408, 525.
 h. tregans, 525.
 h. wardi, 266, 525, 542.
 ibis, 603.
 mexicana, 120.
 Arenaria interpres morinella, 532,
 543, 582.
 Argentina, birds of, 296.
 Arkansas, birds of, 285.
 Arnold, E. C., review of his 'British
 Waders,' 289.
 Arquatella m. maritima, 82, 267.
 Arremonops rufivirgatus, 551.
 Asio accipitrinus, 208.
 flammeus, 31, 61, 280, 410.
 wilsonianus, 409, 537.
 Astragalinus tristis tristis, 62, 67,
 84, 399, 412.
 Astur, 457.
 atricapillus atricapillus, 409.
 Asturina plagiata, 534.
 Atalotriccus, 156.
 Atlapetes, 156.
 Audubon, J. J., copperplates of his
 'Birds of America,' 282, 452.
 life of, 457.
 Aulacorhynchus, 156.
 Auriparus flaviceps flaviceps, 554.
 Australia, birds of, 157, 454.
 Averbach, B. F., Hudsonian Curlew
 near Youngstown, O., 580.
 Averill, Charles K., the outer
 primary in relation to migration
 in the ten-primaried oscines,
 353-358.
 'Avicultural Magazine,' reviewed,
 163, 299, 470, 609.
 Avocet, 59, 528, 541, 580.
 BAEOLOPHUS atricristatus sennetti,
 554.
 bicolor, 418.
 inornatus griseus, 593.
 Bagg, Aaron C., a retrograde
 movement in the Connecticut
 valley, 451; Double-crested Cormorant in the Connecticut valley,
 578.
 Bailey, Alfred M., the White-
 winged Scoter in Louisiana, 442.
 Baird Ornithological Club, third
 annual meeting, 482.
 Baker, John H., the Black Skimmer
 (*Rynchops nigra*) at Ipswich,
 Mass., 125.
 Baldner, Leonard, life and works
 of, 332-341.
 Baldpate, 56, 522, 572.
 Balsac, H. Heim de, notice of his
 'Birds of the Region north of
 the Sahara,' 455.
 Bangs, Outram, the history and
 characters of *Vermivora crissalis* (Salvin and Godman), 251-
 253.
 Bannerman, D. A., notice of his
 'Note on *Tricholaema hirsutum*',
 291.
 Barbour, Thomas, an ornithological
 enigma, 132.
 Barrows, Walter Bradford, obitu-
 ary of, 1-14.
 Bartramia longicauda, 59, 144, 530.
 Bavarian Ornithological Society,
 'Proceedings' reviewed, 167, 611;
 'Anzieger' noticed, 611.
 Baynes, Ernest Harold, obituary
 of, 480.
 Beck, Herbert H., Prothonotary
 Warbler feeding young of another
 species, 140.
 Bedell, Edgar, the Barn Owl
 (*Tyto pratincola*) in Schenec-
 tady County, N. Y., 131.
 Henslow's Sparrow in Helder-
 bergs, N. Y., 590.
 Beebe, William, recent publications
 by, 600.
 Benson, Harry Coupland, obituary,
 619.

Bent, Arthur C., review of his 'Life Histories of N. A. Water Fowl II,' 595.

Bergtold, W. H., the Great Northern Shrike and its song, 277.

Berlin Museum, 241.

Bibliography, 157, 158.

Bicknell, Eugene P., obituary, 475.

Bird, R. D., Mallard Duck nesting in a tree, 441.

Bird Banding, 153, 293, 358-388. 606, 608, 610.

'Bird-Lore,' reviewed, 161, 297, 465, 604.

'Bird Notes and News,' reviewed, 300, 609.

Bishop, S. C., notes on the mating habits of the Sparrow Hawk, 268; Egret and Little Blue Heron in Rensselaer Co., N. Y., 584.

Bittern, 58, 65, 407, 525, 540. Least, 525, 540.

Blackbird, Brewer's 62, 240. Red-winged, 67, 412, 451. Rusty, 412, 240, 451. Yellow-headed, 62, 549.

Blackjack, 574.

Blake, S. F., Little Blue Heron in Massachusetts, 128.

Blincoe, Benedict J., birds of Bardstown, Nelson County, Kentucky, 404-420; Harris's Sparrow in southwestern Ohio, 275.

Bluebill, 574.

Big, 574.

Bluebird, 70, 216, 227, 418.

Bobolink, 62, 66, 135, 240, 280, 412.

Bobwhite, 147, 213, 293, 408. Texas, 532, 543.

Bolivia, birds of, 421.

Bombycilla cedrorum, 63, 67, 71, 85, 357, 414, 551.

Bombycillidae, 357.

Bonasa umbellus umbellus, 65, 408.

Botaurus lentiginosus, 58, 65, 407, 525, 540.

Bourne, Thomas L., Prothonotary Warbler in Erie Co., N. Y., 138.

Bradornis bairdawari, 299.

Brambling, European, 240.

Brant, 265.

Black, 441.

White, 576.

Branta bernicla bernicla, 302.

b. glaucoptera, 265.

canadensis canadensis, 58, 407, 524, 577.

c. hutchinsi, 524.

nigricans, 441.

Brewster, William, review of his 'Birds of the Lake Umbagog Region of Maine,' 453.

Brewster Medal award, 484.

Brewster bequest to the Boston Society, 309.

'British Birds,' reviewed, 163, 299, 468, 608.

British Ornithologists' Club, 'Bul-letin,' reviewed, 163, 299, 468, 608.

British Ornithologists' Union, 482.

Brooks, Earl, Macgillivray's Warbler in Indiana, 277.

Brooks, W. Sprague, a Pink-footed Goose taken in Massachusetts, 265.

Bryens, Oscar M., Michigan Notes, 144; some notes on the Connecticut Warbler (*Oporornis agilis* from Luce Co., Mich., 450.

Bubo virginianus virginianus, 14-31, 66, 410, 444, 445.

Buffle-head, 523, 575.

Bunting, Indigo, 281, 414.

Lark, 63, 239.

Painted, 551.

Snow, 281.

Varied, 551.

Burleigh, Thomas B., notes on the breeding birds of northeastern Georgia, 70-74; notes on the

breeding habits of some Georgia birds, 396-401.

Burtsch, Verdi, some notes on the birds of the Branchport region, N. Y., in 1923, 554-557.

Buteo abbreviatus, 535.

- albicaudatus sennetti, 535, 545.
- borealis, 446.
- b. borealis, 66, 409, 534.
- b. calurus, 60, 535.
- b. harlani, 145.
- b. krideri, 60, 146, 534.
- buteo, 383.
- lineatus lineatus, 409.
- l. texanus, 535.
- platypterus, 535.
- swainsoni, 60, 535.

Butler, Arthur Gardiner, obituary, 615.

Butorides virescens virescens, 408, 526, 541.

Butter-ball, 575.

Buturlin, S., see Tugarinow A., Buzzard, Rough-legged, 382.

- Common, 383.

CALAMOSPIZA melanocorys, 63, 239.

Calcarius lapponicus, 239.

- ornatus, 62, 240.
- pictus, 240.

Calidris canutus, 582.

California, birds of, 157, 245, 601.

Calif, Gladstone, notice of his 'Permanent Bird Homes,' 290.

Callipepla squamata castanogaster, 532.

- s. squamata, 129.

Calyptophilus, 356.

Campothera, 459.

Canutus canutus, 146.

Canvasback, 57, 523, 555, 573.

Caracara, Audubon's 537, 545.

'Cardinal, The,' reviewed, 298.

Cardinal, 227, 414, 606.

- Gray-tailed, 551.

Cardinalis cardinalis canicaudus, 551.

- c. cardinalis, 414.

Carpodacus purpureus purpureus, 67, 84, 412.

Carter, J. D., behaviour of the Barred Owl, 443.

Cartwright, B. W., and C. G. Harlod, an outline of the principles of natural selective absorption of radiant energy, 233-241.

Casmerodus alba, 446.

- egretta, 129, 525, 541, 583, 584.

Cassidix oryzivora, 549.

Catamenia, 155.

Catbird, 63, 69, 227, 417, 553.

Catharus, 155, 156, 355, 600.

Cathartes aura septentrionalis, 137, 409, 534, 545.

Catherpes, 356.

Catoptrophorus, 299.

- semipalmatus inornatus, 59, 530, 543.
- s. semipalmatus, 530, 583.

Celebes, birds of, 155

Celebesia, 155.

Centurus aurifrons, 546.

- carolinus, 137, 411.

Ceophloeus pileatus abieticola, 586.

Certhneis sparveria phalaena, 536.

- sparveria sparveria, 61, 66, 409, 536, 545.

Certhia, 600.

- familiaris americana, 417.

Certhiidae, 357.

Ceryle alcyon alcyon, 66, 410.

- americana septentrionalis, 546.

Chachalaca, 293, 533, 543.

Chaemepelia passerina pallescens, 534.

- p. passerina, 148.

Chaetura pelasgica, 61, 66, 411, 586, 587.

- vuxi, 502, 512.

Chamaeidae, 358.

Chamaethlypis, poliocephala, 552.
Chamberlain, E. B., the Brant (*Branta bernicla glaucogastra*) at Charleston, S. C., 265.
Chapin, J. P., review of his 'Size Variation in Pyrenestes,' 154.
personal mention, 175.
Chapman, Abel, review of his 'The Borders and Beyond,' 151.
Chapman, Frank M., the relationships and distribution of the Warblers of the genus *Compsothlypis*: a contribution to the study of the origin of Andean bird life, 193-208; notice of his papers on new Neotropical birds, 155; notice of his papers on new South American birds, 458, a plea for the evidence, 612.
Charadrius apricarius oreophilus, 294.
melodus, 532.
m. circumcinctus, 326.
nivosus, 532.
semipalmatus, 60, 532, 543.
Charitonetta, 49.
albeola, 523, 575.
Chat, Long-tailed, 552.
Yellow-breasted, 416.
Chauleasmus streperus, 56, 572, 521, 540.
Chen caerulescens, 264, 265, 452, 523, 576.
hyperboreus, 576.
h. hyperboreus, 523.
Chendytes lawi, 605.
Chickadee, 69, 281, 464.
Mountain, 593.
China, birds of, 291, 422, 460, 596.
Chiroxiphia caudata, 588.
linearis, 588.
Chlidonias nigra surinamensis, 55, 520, 570.
Chloropipo, 155.
Chlorospingus, 156.
Chondestes grammacus grammacus, 413.
Chordeiles acutipennis texensis, 547.
virginianus henryi, 546.
v. sennetti, 61.
v. virginianus, 66, 270.
Christofferson, K., breeding of the Ruby-crowned Kinglet in northern Michigan, 593.
Chrostowski, Tadeusz, obituary of, 476.
Chrysaena luteovirens, 297.
Chrysococcyx cupreus, 608.
Chrysoplegma flavinucha, 299.
Chrysopicos, 459.
Chuck-will's-widow, 411.
Cichlherminea, 355.
Cichlopsis, 155.
Ciconia ciconia, 361.
Cinclidae, 357.
Cinclus mexicanus, 142.
Circus, 467.
approximans, 288.
hudsonius, 31, 60, 65, 82, 409, 534, 562.
spilonotus, 288.
Cistothorus, 208, 357.
stellaris, 420, 593.
Clamosocircus, 457.
Clangula hyemalis, 263, 523, 575.
islandica, 575.
Clark, A. H., notice of his 'Observations on animal Coloration,' 462; notice of his 'Animal Flight,' 462.
Climacocircus, 457.
Coale, Henry K., habits of the Marsh Hawk, 269; *Tyto pratincola* in northeastern Illinois, 269
Barn Owls at Chicago, 444;
Violet-green Swallow in Illinois, 137.
Coccothraustes, 257.
Coccyzus americanus americanus, 148, 410, 546.

Coccyzus erythrophthalmus, 66, 420, 546.
Colaptes auratus luteus, 61, 66, 411.
 Coles, Russell J., sea-birds at Cape Lookout, North Carolina, 123
 Coles, Rutgers R., Yellow-throated Warbler at Quaaker Ridge, Mar-maronack, N. Y., 591.
Colinus virginianus virginianus, 147, 408.
 v. *texanus*, 532, 543.
 Colorado, birds of, 135, 142, 442.
Columba flavirostris, 533, 544.
Colymbus auritus, 568.
 dominicus *brachypterus*, 519, 538.
nigricollis californicus, 55.
Comatibis eremita, 300.
Compsothlypis, 155, 193, 600.
 americana, 195, 420.
 a. *usneae*, 195.
pitiayumi alarum, 204.
 p. *inornata*, 199.
 p. *insularis*, 198.
 p. *elegans*, 201.
 p. *melanogenys*, 204.
 p. *nigrirostris*, 196.
 p. *pitiayumi*, 205.
 p. *pacifica*, 203.
 p. *pulchra*, 198.
 p. *speciosa*, 200.
 graysoni, 199.
Compsocoma sumptuosa, 458.
 'Condor, The,' reviewed, 161, 297, 465, 605.
 Connecticut, birds of, 584.
 'Contributions to Breeding Habits of Birds with Consideration of Oology,' 167, 302, 472, 611.
 Cooke, May Thatcher, notice of her 'Spread of the European Starling in North America,' 463.
Coot, 58, 408, 527, 541.
 Porto Rico, 561.
Coracornis, 155.
Coragyps urubu, 409, 442, 534, 545.
Cormorant, 80, 279.
 Double-crested, 56, 407, 555, 570, 578.
 European, 383.
 Mexican, 521, 558.
Corvidae, 357.
Corvus, 357.
brachyrhynchos brachyrhynchos, 61, 66, 411.
cryptoleucus, 548.
leucognaphalus, 446.
tricolor, 283.
 Cory, Charles B., review of his 'Birds of the Americas,' 148.
Coryornis, 585.
 Costa Rica, birds of, 156.
Coturnicops nevboracensis, 419.
 Cowbird, 62, 67, 412, 451, 548.
 Dwarf, 548.
 Red-eyed, 548.
 Crabb, E. D., Mountain Song Sparrow in Oklahoma, 447.
 Crane, Little Brown, 452, 526.
 Sandhill, 419, 452, 526.
 Whooping, 419, 452, 526.
 Creeper, Brown, 417.
Croceethia alba, 529, 541, 556, 582.
 Crosby, Maunsell S., notice of his paper on Bird Banding, 292; see also Griscom, Ludlow.
 Crossbill, American, 557.
 Red, 420.
 White-winged, 557.
Crotophaga sulcirostris, 546.
 Crow, 61, 66, 211, 281, 383, 411.
Crypturus, 157.
 variegatus, 601.
 Cuckoo, Black-billed, 66, 281, 420, 546.
 Yellow-billed, 148, 410, 546.
 Curlew, Eskimo, 531.
 Hudsonian, 480, 531, 543.
 Long-billed, 59, 531, 543.
Cyanocitta cristata, subsp., 396.
 cristata, 66.
 c. cristata, 411.

Cyanocompsa, 257.
 Cyanosylva, 355.
 Cyclarhis, 155, 341, 353, 600.
 Cyclarhis gujanensis, 343, 346.
 g. cearensis, 343, 346.
 g. saturatus, 463.
 ochrocephala, 344.
 viridis, 344, 349.
 wiedi, 344, 349.
 Cygnus buccinator, 303.
 columbianus, 524, 577.
 Cypseloides niger borealis, 497-516.
 DAFILA acuta, 522, 540, 573.
 a. acuta, 365.
 a. tzitzioha, 57.
 Dakota, North, 452.
 Danforth, Stuart T., new birds for Porto Rico, 558-563.
 Davidson, Frances S., Blue-gray Gnatcatcher and Carolina Wren in Minneapolis, 142.
 Dawson, W. L., prospectus of his 'Birds of the World,' 175.
 Deane, Ruthven, one additional copperplate of the folio edition of Audubon's 'Birds of America,' 282, 452.
 Delacour, Jean and Jabouille, Pierre, review of their 'Birds of Central Annam,' 458.
 Delaware Valley Ornithological Club, thirty-fifth anniversary dinner, 482.
 Dendroica, aestiva aestiva, 63, 415, 552.
 caerulescens, 68, 415,
 c. cairnsi, 73.
 castanea, 415, 552.
 cerulea, 147, 415, 552.
 coronata, 68, 552.
 discolor, 144, 416.
 dominica albilora, 416.
 d. dominica, 591.
 fusca, 416, 552, 593.
 magnolia, 415, 552, 593.
 Dendroica palmarum hypochrysea, 85.
 p. palmarum, 416, 557.
 pennsylvanica, 68, 415, 552.
 striata, 415, 552.
 tigrina, 415, 450.
 vigorsi, 68, 140, 420.
 virens, 282, 416, 552.
 Dendronessa, 50.
 galericulata, 50.
 Dendrotyx, 600.
 Dichromanastra rufescens, 526, 541.
 Dickeissel, 63, 414.
 Dionne, Charles E., obituary, 308.
 Dolichonyx, 464.
 oryzivorus, 62, 66, 240, 280, 412.
 Dove, Bronze-winged, 395.
 Gray-hooded Quail, 388-396.
 Ground, 148.
 Inca, 534, 544.
 Mexican Ground, 534, 544.
 Mourning, 60, 147, 148, 227, 313, 409.
 Ruddy Quail, 130.
 Western Mourning, 533, 544.
 White-fronted, 533, 544.
 White-winged, 532, 544.
 Dowitcher, 240, 582.
 Long-billed, 528, 541.
 Dryobates pubescens medianus, 61, 66.
 p. pubescens, 410.
 scalaris bairdi, 546.
 villosum villosum, 66, 410.
 Duck, Allen's Ruddy, 558.
 Black, 281, 407, 572.
 Black-bellied Tree, 524.
 Fulvous Tree, 524.
 Mandarin, 41-50.
 Masked, 573.
 Mottled, 521, 540.
 Ring-necked, 419, 523, 574.
 Ruddy, 58, 523, 540, 576.
 Wood, 41-50, 407, 573.
 Ducks, 454.
 Dulidae, 358.

Dumetella carolinensis, 63, 69, 417, 553.

Dwight, Jonathan and Griscom, Ludlow, notice of their, 'Descriptions of New Birds from Costa Rica,' 156.

EAGLE, 383.

- Bald, 313, 409, 568.
- Golden, 443, 536.

Eaton, S. H., White Pelican at Lawrenceville, Ill., 263.

Ectopistes migratorius, 137, 419.

Egret, 129, 525, 541.

- American, 419, 533, 584.
- Buff-backed, 603.
- Reddish, 526, 541.
- Snowy, 525, 541.

Egretta candidissima candidissima, 419, 525, 541.

Egypt, birds of, 603.

Eider, American, 279.

- King, 264, 575.

'El Hornero,' reviewed, 301.

Elanoides forficatus, 130, 146, 534.

Elanus leucurus majusculus, 534.

Elrod, Mrs. Walter D., Tyrannus verticalis in eastern Oklahoma, 271.

Emberizoides, 156.

Empidonax, 295.

- flaviventris, 411.
- minimus, 66, 420.
- trailli alnorum, 83.
- t. trailli, 61, 548.
- virescens, 411.

'Emu, The,' reviewed, 164, 470, 609.

Eophona, 257.

Eremomela pusilla prospера, 296, 300.

Ereunetes pusillus, 529, 582.

- mauri, 529, 562.

Erismatura allenii, 558.

- jamaicensis, 58, 523, 540, 576.

Erithacus rubecula melophilus, 384.

Erolia subruficollis, 300.

Essex Co., Ornithological Club, 'Bulletin' reviewed, 606.

Esten, S. R., nest life of Towhee, etc., 602.

Euphagus carolinus, 240, 412.

- cyancephalus, 62, 240.

Europe, birds of, 152, 358-388.

Euscarthmus, 600.

FALCO columbarius columbarius, 145, 452, 536, 545.

- c. richardsoni, 145, 536.
- fusco-caeruleus, 536, 545.
- mexicanus, 452.
- peregrinus anatum, 137, 452.
- rusticolus rusticulus, 452.
- sparverius sparverius, 268.

Falcon, Aplomado, 536, 545.

- Prairie, 452.

Falcunculus, 343.

Fiji, birds of, 294, 401.

Finch, Purple, 67, 84, 412.

Fisher, A. K., Walter Bradford Barrows, 1-14.

Fleming, J. H., notice of his 'A New Form of Larus dominicanus,' 295.

Flicker, 134, 216, 227, 411.

- Northern, 61, 66.

Florida, birds of, 130, 132, 264, 266, 443, 579, 581.

Florida caerulea, 128, 129, 526, 541, 583, 584.

Flycatcher, Acadian, 411.

- Crested, 66, 270, 411.
- Derby, 547.
- Least, 66, 420.
- Mexican Crested, 547.
- Scissor-tailed, 547.
- Traill's, 61, 548.
- Yellow-bellied, 411.

Fregata, 171.

- quila, 521, 540, 578.
- ariel wilsoni, 171.
- minor mathewsi, 171.

Frey, Edith K., Winter Wren in Michigan, 278.

Friedmann, Herbert, notes on the birds observed in the Lower Rio Grande Valley of Texas during May, 1924, 537-555.

Fringilla montifringilla, 240.

Fulica, 208.

 americana, 58, 408, 527, 541.

 caribaea **major**, 561.

GABRIELSON, I. N., notice of his 'Food Habits of Some Winter Bird Visitants,' 153.

Gadwall, 56, 521, 540, 572.

Gaede, A. Henry, see Yoder, Wm., Galeoscoptes, 356.

Gallicolumba rubescens, 388-396.

 jobiensis, 389, 390.

 luzonica, 390.

 stairi, 390, 395.

 xanthoura, 390, 393.

Gallinago delicata, 408, 528, 556.

Gallinula chloropus **portoricensis**, 560.

 galeata, 527, 541.

Gallinule, Florida, 527, 541.

 Purple, 419, 527, 541.

 Porto Rico, 560.

Gallus gallus, 446

Game refuge bill and the DuPont Powder Co., 176.

Gavia immer, 65, 407.

 i. elasson, 568.

 pacifica, 278.

 stellata, 554.

Geese, 454.

Gelochelidon nilotica, 519, 538, 558.

Geococcyx californianus, 546.

Georgia, birds of, 70-74, 396-401.

Geositta cunicularia hellmayri, 296.

Geospiza, 154, 257.

Geothlypis trichas brachydactyla, 563.

 t. trichas, 69, 86, 416, 557.

Geotrygon, 396.

Geranospiza, 457.

Gifford, E. W., the Gray-hooded Quail Dove (*Gallicolumba rubescens*) of the Marquesas Islands, in captivity, 388-396.

Gillespie, John A., see Potter, J. K., Glaucionetta clangula americana, 58, 575.

Globicera pacifica, 129.

Gnatcatcher, Blue-gray, 142, 418, 554.

Godwit, Marbled, 59, 240, 529.

 Hudsonian, 240, 529.

Golden-eye, 58, 281, 575.

Goldfinch, 62, 84, 67, 216, 399, 412, 607.

Goshawk, 131.

 American, 409.

 Mexican, 535.

Goosander, 571.

Goose, Blue, 264, 265, 452, 523, 576.

 Canada, 58, 281, 407, 524, 577.

 Hutchin's, 524.

 Lesser Snow, 147, 576.

 Pink-footed, 265.

 Snow, 523.

 White-fronted, 523, 577.

Grackle, Boat-tailed, 312.

 Bronzed, 62, 67, 84, 412.

 Florida, 397.

 Great-tailed, 550.

 Purple, 213, 227, 464.

Grallina picata, 464.

Great Britain, birds of, 598, 599.

Grebe, Eared, 55.

 Horned, 568.

 Mexican, 519, 538.

 Pied-billed, 55, 419, 568, 519, 538.

Greene, E. R., American Scoter in Florida, 579.

Grinnell, Joseph, bird netting as a method in ornithology, 425-251; review of his 'Bibliography of California Ornithology Second Installment,' 157; notice of his

'Wild Animal Life as a Product and as a Necessity of National Forests,' 291; notice of his 'Risks on Introduction of Alien Game Birds,' 601; obituary of Richard Hunt, 617.

Griscom, Ludlow, King Eider in North Carolina, 264; notice of his 'Descriptions of New Birds from Panama and Costa Rica,' 156; notice of his 'Bird Hunting among the Wild Indians of Western Panama,' 156; see also Dwight, Jonathan and Miller, W. D.

Griscom, Ludlow, and Crosby, Maunsell S., birds of the Brownsville Region, Southern Texas, 432-440, 519-537.

Grosbeak, Pine, 281.
 Rose-breasted, 67, 281, 414, 602.

Gross, Alfred O., suggested ornithological work for bird banders, 95-105; diseases of the Ruffed Grouse, 423.

Grote, H., notice of his, 'Beitrag zur Kenntnis der Vogelfauna des Graslandes von Neukamerun,' 296.

Grouse, Canada Ruffed, 281.
 Prairie Sharp-tailed, 60, 65.
 Ruffed, 65, 213, 408, 423, 453.

Grus americanus, 419, 452, 526.
 canadensis, 452, 526.
 mexicanus, 419, 452, 526.

Guiana, birds of, 600.

Guiraca, 257.

'Gull, The' noticed, 607.

Gull, Black-headed, 370.
 Franklin's, 55, 519, 569.
 Herring, 407, 519, 569, 581.
 Laughing, 125, 313, 519, 569.
 Lesser Black-backed, 374.
 Ring-billed, 55, 77, 519.
 Western, 605.

Gummyza, 450.

Gwillim, Lady, biography of, 607.

Gymnogenys typicus, 288.

Gyrfalcon, Gray, 452.

HACHISUKA, Masa V., review of his 'Comparative List of Birds of Japan and the British Isles,' 598.

Halcyon chelicuti hylobius, 296.

Haliaeetus leucocephalus leucocephalus, 409.

Hamilton, William J., Jr., King Rail nesting on Long Island, N. Y., 127; King Rail wintering on Long Island, 266.

Hankinson, T. L., Swallow-tailed Kite in southern Michigan, 130.

Haplocichla, 355.

Harding, Katharine C., Mockingbird nesting in Cohasset, Mass., 141.

Harrold, C. G. see Cartwright, B. W.,

Harrold, E. S., notes from Manitoba, 146.

Hausman, Leon Augustus, on the utterances of the Kingbird, (*Tyrannus tyrannus* Linn.), with especial reference to a recently recorded song, 320-326.

Hawaii, birds of, 160.

Hawk, Broad-winged, 535.
 Cooper's, 145, 211, 409, 534, 545, 585.
 Duck, 131, 451, 452.
 Harlan's, 145.
 Harris's, 534, 545.
 Krider's, 60, 146, 534.
 Marsh, 37, 60, 65, 82, 269, 409, 534, 562.
 Pigeon, 145, 452, 536, 545.
 Red-shouldered, 409.
 Red-tailed, 66, 211, 409, 451, 534.
 Richardson's Pigeon, 145, 536.

Hawk, Rough-legged, 279.
Sennett's White-tailed, 535, 545.
Sharp-shinned, 65, 145, 211, 409, 534.
Sparrow, 61, 66, 213, 268, 409, 536, 545.
Swainson's, 60, 535.
Texas Red-shouldered, 535.
Western Red-tailed, 60, 535.
Zone-tailed, 535.
Heath-Hen, threatened extinction of, 482.
Hedymeles ludovicianus, 414.
Heinroth, Oskar and Magdalena, review of their 'Birds of Middle Europe,' 152.
Heleodytes, 295, 357.
brunneicapillus couesi, 553.
Heliochera, 155.
Hellmayr, C. E., notice of his 'Die Vögel der Silla der Caracas,' 156; review of his 'Birds of the Americas,' 148; obituary of Eugene L. Simon, 478.
Helmitheros vermicivorus, 415.
Henderson, Junius, Bobolink in Colorado, 135.
Heron, Black-crowned Night, 58, 419, 526, 541.
Great Blue, 58, 65, 128, 408, 525, 568.
Great Gray, 364.
Green, 408, 526, 541.
Little Blue, 128, 129, 313, 583, 584.
Louisiana, 313, 526, 541.
Snowy, 419.
Treganza's, 525.
Ward's, 525, 540.
Yellow-crowned Night, 526.
Herons, 157.
Hesperiphona, 256.
Himantopus mexicanus, 59, 528, 541.
Hirundo daurica vernayi, 299.
Hirundo erythrogastera, 63, 67, 85, 414, 552.
rustica rustica, 379, 610.
Hix, George E., abundance of the Laughing Gull (*Larus atricilla*) about New York City, 125; Black Skimmer at Long Beach, N. Y., 125.
Hobson, William Daily, obituary, 175.
Hollister, Ned, another record of the Ruddy Quail Dove at Key West, 130; obituary, 478.
Holt, Ernest G., early shooting and some late breeding records for Alabama, 147; type locality of *Ardea herodias wardi* Ridgway: a correction, 266; the dance of the Tangará, 588.
Honker, 577.
Howitt, Henry, habits of the Flicker, 134; Osprey at Guelph, Ontario, 443; protective coloration of Horned Larks, 446; the Starling at Guelph, Ontario, 446.
Howland, R. H. and Carter, T. D. nesting of the Prothonotary Warbler in northern N. J., 138.
Hubbard, Sara A., obituary, 618.
Hummingbird, Black-chinned, 547.
Broad-tailed, 588.
Ruby-throated, 411, 547.
Hunt, Richard, obituary, 617.
Hydranassa tricolor ruficollis, 526, 541.
Hylocichla, 355.
aliciae, 418.
fuscescens fuscescens, 69, 420.
guttata, *pallasi*, 69, 418.
mustelina, 418.
ustulata swainsoni, 418.
Hyloctistes, 295.
Hylopezus, 149.
Hypsibemont, 149.
IBIDORHYNCHA, 299.

'Ibis, The,' reviewed, 162, 298, 467, 607.
 Ibis, Glossy, 442.
 White-faced Glossy, 524.
 Wood, 525, 540.
 Ice-duck, 575.
 Icterus bullocki, 550.
 cucullatus sennetti, 550.
 galbula, 62, 67, 412.
 melanocephalus auduboni, 550.
 spurius, 412, 550.
 Icteria virens virens, 416.
 v. longicauda, 552.
 Ictinia mississippiensis, 534.
 Illinois Audubon Society, notice of its 'Bulletin,' 292.
 Illinois, birds of, 137, 263, 269, 292, 444.
 Indiana, birds of, 277.
 International Committee for the Protection of Birds, meeting of, 484.
 International Congress on Bird Protection, 175
 International Ornithological Congress, 484.
 Ionornis martinicus, 419, 527, 541.
 Iowa, birds of, 86-94, 269, 563-577.
 Iridoprocne bicolor, 68, 145, 552.
 Ithaginis rocki, 291.
 Ixobrychus exilis, 525, 540.
 Ixoreus, 355.
 JABOUILLE, Pierre, see Delacour, Jean.
 Jacana, Mexican, 532.
 Jacana spinosa, 532.
 Jackson, Ralph W., strange behaviour of the Great Horned Owl, in behalf of young, 445.
 Jaeger, Parasitic, 569.
 Japan, birds of, 291, 597, 598.
 Jay, Blue, 66, 213, 396, 411.
 Green, 548.
 Jensen, J. K., late nesting of the Scaled Quail (*Callipepla* s. *squamata*), 129; bathing of the Broad-tailed Hummingbird, 588; English Sparrows and Robins, 591; Mountain Chickadee with an adopted family, 593.
 Johnson, Charles E., Kingfisher and Hawk, 585.
 Jourdain, F. C. R., the Bean Goose in North America, 173.
 'Journal für Ornithologie,' reviewed 166, 301, 610.
 Junco, Carolina, 71.
 Oregon, 146.
 Slate-colored, 67, 413.
 Junco hyemalis carolinensis, 71.
 h. hyemalis, 67, 413.
 h. oreganus, 146.
 KALMBACH, E. R. and McAtee, W. L., notice of their 'Homes for Birds,' 612.
 Kentucky, birds of, 404-420.
 Kessler, Philip, see Kuerzi, John.
 Killdeer, 60, 65, 408, 485-496, 531, 543.
 Kingbird, 61, 66, 83, 320, 411, 547.
 Arkansas, 61, 271.
 Couch's, 547.
 Kingfisher, Belted, 66, 213, 410, 568, 585.
 Texas, 546.
 Kinglet, Golden-crowned, 86, 418.
 Ruby-crowned, 144, 418, 593.
 Kirkwood, Frank C., Cliff Swallow (*Petrochelidon*) again nesting in Baltimore Co., Md., 275; unusual nesting site of Great Horned Owls, 444.
 Kite, 383.
 Mississippi, 534.
 Swallow-tailed, 130, 146, 534.
 White-tailed, 534.
 Kittiwake, 279.
 Kittredge, Joseph Jr., Ruby-crowned Kinglet in summer in the Adirondacks, 144.

Knot, 146, 240, 582.

Kuerzi, John and Richard, and P. Kessler, Black Skimmer and Golden Plover in Bronx County, N. Y., 125; Wilson's Phalarope (*Steganopus tricolor*) in Bronx County, N. Y., 126; Wilson's Phalarope in Bronx Park, N. Y., 267.

Kuroda, Nagamichi, review of his 'Avifauna of the Riu Kiu Islands', 597.

LABRADOR, birds of, 74-86, 272, 278.

Lagopus scoticus x. *L. lagopus*, 302.

Lalage leucomela insulicola, 170.

Laletes, 353.

Lalocitta lidthi, 597.

Lamprocolius caprius, 608.

Lang, Herbert, personal mention, 175.

Laniidae, 357.

Lanius borealis, 277.
ludovicianus excubitorides, 63.
l. migrans, 68, 414.
undulatus, 283

Lanivireo, 341, 354.
flavifrons, 415.
solitarius alticola, 72.
s. solitarius, 415.

Lark, Horned, 84.
Pallid Horned, 61, 281, 349-353, 411.
Texas Horned, 548.

Larus argentatus, 55, 407, 519, 569, 581.
atricilla, 125, 519.
delawarensis, 77, 519, 569.
dominicanus austrinus, 295.
franklini, 55, 519, 569.
fuscus affinis, 374.
occidentalis livens, 606.
o. wymani, 606.
ridibundus, 370.

LaTouche, J. D. D., notice of his 'Handbook of the Birds of East China,' 596.

Lawrence, Robert B., notes on Texas ducks, 263.

Lawyer, G. A., notice of his 'Game Laws, 1925-6,' 602.

'Le Gerfaut,' reviewed, 165, 301.

'L'Oiseau,' reviewed, 165, 300, 610.

Lecythoplaetes fuliginosus, 299.

Leffingwell, Dana J., Connecticut Warbler in spring migration in central New York, Mockingbird in central New York, 140.

Lepidocolaptes angustirostris hellmayri, 421.
a. bivittatus, 421.
a. certhiolus, 421.

Leptolophus, 459.

Leptotila fulviventer brachyptera, 533, 544.

Leucolepis, 357.
thoracicus, 459.

Lewis, Harrison F., notes on birds of the Labrador peninsula in 1923; the first Labrador record of the Starling, 272; notes on birds of the Labrador Peninsula in 1924, 278; obituary of C. E. Dionne, 308.

Lewis, Walter E., Cinnamon Teal and Black Brant in Oklahoma, 441.

Limicolae, 289.

Limnodromus griseus, 240, 582.
griseus scolopaceus, 528, 541.

Limosa fedoa, 59, 240, 529.
haemastica, 240, 529.

Limpkin, 527.

Lincoln, Frederick C., notes on the bird life of North Dakota with particular reference to the summer waterfowl, 50-64; notice of his 'Returns from Banded Birds, 1920-1923,' 153; some results of bird banding in Europe, 358-388.

Linnaean Society of New York, notice of 'Proceedings,' 295.

Little, Leslie T., birds caught by Burdocks, 284.

Lobipes lobatus, 556.

Lochites, 149.

Locustella ochotensis, 291.

Loddigesia mirabilis, 608.

Longspur, Chestnut-collared, 62, 240.

Lapland, 239.

McCown's, 239.

Smith's, 240.

Longstreet, R. J., Blue Goose (*Chen caerulescens*) at Seabreeze, Florida, 264; boreal Limicolae in Florida in summer, 581.

Lönberg, Einar, recent papers by, noticed, 294.

Loon, 65, 407, 568.

Pacific, 278.

Red-throated, 554.

Lophodytes, 49.

cucullatus, 407, 521, 540, 571.

Lophotes savilei, 607.

Lophortyx gambeli, 419.

Lophotriccus, 600.

Loring, J. Alden, Northern Raven in Tioga Co., N. Y., 271.

Louisiana, birds of, 442.

Loxia curvirostra, minor, 420, 557.

leucoptera, 557.

MACKAY, George H., breeding of the Herring Gull in Massachusetts, 517-518.

Machaeropterus, 155.

Magpie, 146.

Magpie-Lark, Australian, 464.

Maine, birds of, 128, 261, 265, 453.

Mallard, 56, 263, 407, 441, 521, 571.

Manacus, 155.

Manakin, 588.

Manitoba, birds of, 146.

Man-o'-war-bird, 521, 540, 578.

Marburger, Clifford, out of print, 612.

Mareca americana, 56, 522, 572.

penelope, 80, 263.

Margarornis, 156.

Marila americana, 57, 522, 573.

affinis, 58, 574, 581.

collaris, 419, 523, 574.

marila, 522, 574.

valisineria, 57, 523, 555, 573.

Martin, Martha Evans, obituary, 481.

Martin, Purple, 63, 67, 414.

Maryland, birds of, 134, 262, 275.

Massachusetts, birds of, 125, 126, 128, 130, 134, 141, 265, 451, 586, 594.

Mathews, Gregory, M., review of his 'The Birds of Australia,' 158, 295, 454, 600.

McAtee, W. L., reviews by, 159, 464, 603. See also Kalmbach, E. R.

Meadowlark, 67, 213, 227, 412, 602.

Rio Grande, 550.

Western, 62.

Megaquiscalus major macrourus, 550.

Megalornis canadensis, 120.

c. *pratensis*, 121.

c. *tabida*, 122.

mexicana, 120.

nesiotes, 120.

Melanerpes erythrocephalus, 66, 410.

Melanopareia, 149.

Meleagris gallopavo intermedia, 533.

g. *silvestris*, 419.

Melidectes torquatus cahni, 171.

Melierax, 457.

Melopelia asiatica, trudeaui, 533, 544.

Melospiza georgiana, 413, 247.

lincolni lincolni, 413, 562.

melodia clementae, 297.

Melospiza m. coronatorum, 297.
m. fallax, 447.
m. graminea, 297.
m. melodia, 67, 71, 85, 281,
413.
m. montana, 447.

Merganser, 65.
Hooded, 407, 521, 540, 571.
Red-breasted, 571.

Mergus americanus, 65, 571.
serrator, 571.

Merops apiaster, 607.

Mexico, birds of, 251.

Michigan, birds of, 130, 144, 277,
278, 442, 449, 450, 460, 593.

Micrastur, 457.

Microeca fascinans, 465.

Micromonacha, 157.

Micropalama himantopus, 59, 146,
240, 528, 541, 556.

Migration, 353-358, 451, 454.

Mikan's 'Flora and Fauna of
Brazil', 283.

Miller, Julia, a double-yolked
Robin's egg, 278.

Miller, Richard F., the Prothonotary
Warbler in southern New
Jersey, in summer, 139.

Miller, W. deW., the secondary
remiges and coverts in the
Mandarin and Wood Ducks, 41-
50; a new race of *Sicalis flaveola*
from southeastern Brazil, 253-
255; review of his 'Further
Notes on Ptilosis,' 459.

Miller, W. deW., and Griscom,
Ludlow, notice of their 'De-
scriptions of New Birds from
Nicaragua,' 295; notice of their
'Notes on Central American
Birds,' 600.

Milvus milvus, 383.

Mimocichla, 355.

Mimus, 155, 356.
p. polyglottos, 140, 141, 417.

Miner, Jack, review of his 'Jack
Miner and the Birds,' 454.

Minnesota, birds of, 142.

Mitrephanes, 295.

Mniotilla varia, 68, 415, 552.

Mockingbird, 140, 141, 227, 417.
Western, 553.

Molothrus ater ater, 62, 67, 412,
548.
a. obscurus, 548.
bonariensis, 549.
brevirostris, 549.

Molt, 611.

Momotus momota, 193.

Morris, Robert O., obituary, 480.

Mousley, Henry, further notes on
the breeding of the Starling
(*Sturnus vulgaris*) at Hatley,
Quebec, 1924, 273; further notes
on the birds of Hatley, Quebec,
1924, 281.

Munia, 464.

Murdoch, John, a remarkable flight
of Sanderlings, 126.

Murie, O. J., the Nighthawk in
Alaska, 270.

Murphy, Robert Cushman, notice
of his 'The Most Valuable
Bird in the World,' 158; review
of his 'Bird Islands of Peru,'
284; notice of his 'A Sketch of
the Bird Life of Polynesia,' 292;
personal mention, 176.

Muscadivores latrans, 129.

Muscicapa minima neumanniana,
296.

Muscivora forficata, 547.

Myadestes, 355, 600.

Mycerobas, 257.

Mycteria americana, 525, 540.

Myers, Everett C., will the Starling
learn to migrate in this country,
134.

Myiarchus, 295.
cephalotes caribbaeus, 611.
crinitus, 66, 270, 411.

Myiarchus magister nelsoni, 547.
 Myiobius, 155, 600.
 Myiochanes, 155, 157, 295.
 virens, 66, 411, 548.
 Myiozetetes, 155, 600.
 Mynah, Crested, 159.
 Myrmopagis, 149.
 Myzantha obscura, 454.
 o. perplexa, 454.

 NANNUS, 357.
 hiemalis hiemalis, 73, 278, 417.
 Naumburg, Elsie M. B., a few remarks about *Cyclearhis gujanensis cearensis*, 341-349; a new *Lepidocolaptes*, 421.
 Nebraska, birds of, 485.
 Nelson, E. W., danger in bird traps, 304.
 Neochelidon, 155.
 tibialis, 155.
 Neochloe, 353.
 Neomixis flavoviridis, 299.
 Nesotriccus debooyi, 446.
 Netherlands Ornithological Club, 'Proceedings,' reviewed, 166, 301, 610.
 Nettion carolinense, 57, 82, 419, 522, 572.
 crecea, 367.
 New Brunswick, birds of, 130, 131.
 New Hampshire, birds of, 288.
 New Jersey, birds of, 31-41, 131, 138, 139, 267.
 New Jersey Audubon Society, notice of its 'Bulletin', 33.
 New Mexico, birds of, 129.
 New York, birds of, 125, 127, 131, 138, 140, 144, 266, 267, 271, 441, 554, 584, 590, 591.
 New Zealand, birds of, 294.
 Nicaragua, birds of, 295, 600.
 Nice, Margaret M., changes in the bird-life in Amherst in 21 years, 594.
 Nighthawk, 66, 216, 270, 319, 411.

 Nighthawk, Sennett's, 61.
 Texas, 547.
 Western, 546.
 Nomonyx, 49.
 dominicus, 523.
 Nonpareil, 313.
 'Norsk Ornithologisk Tidsskrift,' reviewed, 302, 610.
 North Carolina, birds of, 123, 264, 447, 450.
 North Dakota, birds of, 50-64, 145.
 Northeastern Bird-banding Association, notice of 'Bulletin,' 467, 606.
 Norton, Arthur H., notes on the Black Skimmer in Maine, 261; Blue Goose (*Chen caerulescens*) in Maine, 265.
 Numenius americanus, 59, 531, 543.
 borealis, 531.
 hudsonicus, 531, 543, 580.
 Nuthatch, Red-breasted, 86, 281, 417.
 White-breasted, 417.
 Nuttall Ornithological Club, notice of its anniversary publication, 159.
 Nutting, C. C., and others, notice of their 'Fiji-New Zealand Expedition,' 294.
 Nyctanassa violacea, 526.
 Nyctea nyctea, 410.
 Nyctibius griseus, 607.
 Nycticorax nycticorax naevius, 58, 419, 526, 541.
 Nyctidromus albicollis merrilli, 546.
 Nyctiphrynus, 295.

 OBERHOLSER, H. C., notice of his 'Notes on the Races of *Ramphaleyon capensis*', 291; notice of his 'Description of a New *Oriolus*', 291.
 Oceanites oceanicus, 262.
 Oceanodroma leucorhoa, 79.
 Oddi, A. Degli, notice of his 'Life

and Bibliography of T. Salvadori,' 158.
Ogburn, Charlton, Jr., see Rosen, Victor,
Ohio, birds of, 275, 447, 580.
Oidemia americana, 575, 579.
 deglandi, 442, 576.
 perspicillata, 576.
Oklahoma, birds of, 271, 441, 447.
Old-squaw, 263, 523, 575.
Olds, Henry, obituary, 616.
Ontario, birds of, 124.
'Oölogist, The,' reviewed, 162, 298, 466, 606.
'Oölogists' Record,' reviewed, 164, 300, 470, 609.
Oporornis agilis, 140, 420, 450.
 formosus, 416.
 philadelphia, 69, 282, 416.
Oreopeleia, 396.
 montana, 130.
Oreoscopetes, 356.
Oreothlypis, 600.
Oriole, Audubon's, 550.
 Baltimore, 62, 67, 412.
 Bullock's, 550.
 Orchard, 412, 550.
 Sennett's, 550.
Oriolus indicus ochroxanthus, 291.
Ornithological Articles in other journals reviewed, 168, 303, 473.
'Ornithologische Beobachter,' reviewed, 166, 302, 611.
'Ornithologische Monatsberichte,' reviewed, 166, 302, 473, 610.
Oropheus, 149.
Ortalís vetula mecalli, 533, 543.
Oryzoborus, 257.
Osprey, 66, 281, 313, 409, 443, 451, 537.
Otanes, Faustino Q., notice of his account of the Crested Mynah, 159.
Otocoris, 357.
 alpestris alpestris, 84.
 a. alticola, 349-353.
Otocoris a. giraudi, 548.
 a. praticola, 61, 411.
Otus asio asio, 410.
 a. mecalli, 546.
Ouzel, Water, 142.
Ovenbird, 69, 85, 281, 416.
Owl, Barn, 131, 177, 409, 444, 537.
 Barred, 410, 443.
Burrowing, 61.
Great Horned, 14-31, 66, 410, 444, 445.
Long-eared, 409, 537.
Richardson's, 131.
Screech, 410.
Short-eared, 31, 61, 280, 410.
Snowy, 410.
Texas Screech, 546.
Oxyechus vociferus, 60, 65, 408, 485-496, 531, 543.
Oxyrhynchus serratus, 283.
Oystercatcher, 313.

PACHYRHAMPHUS, 295.
Pachysylvia, 155.
Pagolla wilsonia, 532, 543.
Palmer, T. S., the forty-second stated meeting of the American Ornithologists' Union, 105-120; report of the secretary, 116-120; obituaries of members, 174, 476, 478, 613.
Panama, birds of, 156.
Pandion haliaetus, 446.
 h. carolinensis, 66, 409, 537.
Pangburn, Clifford H., Short-billed Marsh Wren breeding in West Chester Co., N. Y., 593; Tennessee Warbler in Vermont, 592; Egret in Vermont, 592.
Parabuteo, 457.
 unicinctus, harrisi, 534, 545.
Parauque, Merrill's, 546.
Paridae, 357.
Parker, Arthur C., Black Skimmer on Lake Ontario, 441.
Partridge, Hungarian, 601.

Parus atricapillus, 300.
 caeruleus, 384.
 carolinensis carolinensis, 418.
 Passer, 256, 412.
 Passerculus sandwichensis nevadensis, 62.
 s. savanna, 412.
 Passerella iliaca, 413.
 Passerherbulus henslowi, 420, 590.
 Passerina ciris, 551.
 cyanea, 414.
 versicolor versicolor, 551.
 Pedioecetes phasianellus campestris, 60, 65.
 Pearson, T. Gilbert, 'Heros of the United States,' 157; mention of his 'Notes on the winter Bird Life of Southeastern Texas,' 296.
 Pelecanus erythrorhynchos, 56, 263, 521, 539, 570.
 occidentalis, 124, 521, 540.
 Pelican, Brown, 124, 211, 314, 521, 540.
 White, 56, 263, 455, 521, 539, 570, 605.
 Pelidna alpina sakhalina, 529.
 Pellorneum, smithi, 155.
 Penard, Thomas E., nesting of Great Blue Heron in Boothbay, Maine, 128.
 Pennsylvania, birds of, 140, 583, 586.
 Penrose, Charles B., obituary, 307.
 Penthestes atricapillus atricapillus, 69.
 gambeli gambeli, 593.
 Perissospiza, 257.
 Perkins, R. C. L. and Swezey, O. H., notice of their paper on the introduction of insects and birds in Hawaii, 160.
 Perrine, Thelma and Keble B., winter habits of the White-throated Sparrow at Chapel Hill, N. C., 447.
 Perrine, Keble, B., the Cape May Warbler at Chapel Hill, N. C., 450.
 Peru, birds of, 158, 284.
 Peters, James L., notes on the taxonomy of *Ardea canadensis* Linne., 120-122; notice of his 'Review of the Limpkins,' 296; notice of his 'New Geositta from Western Argentina,' 296.
 Petrel, Leach's, 79.
 Wilson's, 262.
 Petrochelidon, 155.
 lunifrons, 275.
 l. lunifrons, 63, 414.
 Peucaea aestivalis, bachmani, 413.
 Peucedramus, 600.
 olivaceus, 600.
 o. arizonae, 600.
 Pewee, Wood, 66, 411, 548.
 Phainoptila, 156.
 Phalacrocorax auritus, 407, 555, 570, 578.
 a. auritus, 56.
 bougainvillaei, 284.
 carbo, 80, 279, 383.
 vigua mexicana, 521, 558.
 Phalarope, Northern, 556.
 Red, 124.
 Wilson's, 58, 126, 267, 527, 541.
 Phalaropus fulicarius, 124.
 Phaps chalcoptera, 395.
 Phasianus torquatus, 418.
 Pheasant, Ring-necked, 418.
 Pheugopedius, 155.
 Pheuticus, 257.
 Phillips, John C., Leonard Baldner, seventeenth century sportsman and naturalist, 332-341.
 Phloeotomus pileatus pileatus, 410.
 Phoebe, 66, 411, 548.
 Phoenicothraupis, 157.
 Phoenostictus, 149.
 Phylloscartes, 600.
 Pica pica hudsonia, 146.
 Picoides arcticus, 145.
 Pickwell, Gayle, some nesting habits

of the Belted Piping Plover, 326-332; the nesting of the Killdeer, 485-496.

Pigeon, Fijian Nutmeg, 129.
Passenger, 419, 453.
Red-billed, 533, 544.

Pintail, 57, 365, 522, 540, 573.

Pipilo erythrophthalmus erythrophthalmus, 67, 414.

Pipit, American, 417.

Pipra, 600.
iris, 463.
opalizans, 463.

Piprites, 155.

Piranga erythromelas, 67, 414.
hepatica, 551.
rubra rubra, 414.

Pisobia sp., 59.
bairdi, 528.
fuscicollis, 528.
maculata, 528.
minutilla, 528, 541.

Pitangus sulphuratus derbianus, 547.

Planesticus, 156, 354.
migratorius achrusterus, 74.
m. propinquus, 64, 70, 418.

Platalea leucorodia, 384.

Platytriccus, 295.

Plegadis autumnalis, 442.
guarauna, 524.

Plover, Belted Piping, 326-332.
Black-bellied, 531, 582.
Golden, 125, 531, 556.
Mountain, 60, 532, 543.
Piping, 531.
Semipalmated, 60, 532, 543.
Snowy, 531.
Upland, 59, 144, 530.
Wilson's, 319, 532, 543.

Pluvialis dominica dominica, 531, 556.

Podasocys montanus, 60, 532, 543.

Podilymbus podiceps, 55, 419, 519, 538, 568.

Polioptila, 356.

Polioptila caerulea caerulea, 418, 356, 554.

Polyborus cheriway, 537, 545.

Polynesia, birds of, 292.

Pooecetes gramineus confinis, 62.
g. gramineus, 67, 412.

Poole, Earl L., a graphic method of recording flight, 209-216.

Porto Rico, birds of, 282, 558-563.

Porzana carolina, 58, 408, 527, 541.

Potter, Julian K., and Gillespie John A., observations on the domestic behaviour of the Barn Owl, 177-192.

Praeger, W. E., the birds of the Des Moines Rapids, 563-577.

Prairie Chicken, 60.

Progne elegans, 276.
furcata, 276.
subis subis, 63, 67, 414.

Protonotaria citrea, 138, 139, 140.

Psellophorus, 156.

Pseudocolaptes, 156.

Pseudotadorna cristata, 302.

Ptilosis, 459.

Ptilotis albilineata, 295.

Puffinus griseus stricklandi, 123.
lherminieri, 123.
pacificus whitneyi, 608.

Purdy, James Britton, obituary of, 620.

Pygochelidon, 208.

Pyrenestes, 154.

Pyriglena berlepschi, 140.

Pyrotrogon erythrocephalus intermedius, 608.

QUAIL, 293.
California, 601.
Chestnut-bellied Scaled, 532.
Gambel's, 419.
Scaled, 129.

Quebec, birds of, 273, 281.

Querquedula cyanoptera, 263, 441, 522.
discors, 57, 419, 522, 540, 572.

Quiscalus quiscale aeneus, 62, 67,
84, 412.
q. aglaeus, 397.

RAIL, King, 266, 527.
Sora, 408.
Virginia, 146, 419.
Yellow, 419.

Rallus elegans, 266, 527.
virginianus, 146, 419.

Ramphaleyon, 291.

Rathbun, Samuel F., the Black
Swift and its habits, 497-516.

Raven, Northern, 271.
White-necked, 548.

Raven, Charles E., notice of his 'In
Praise of Birds,' 599.

Recurvirostra americana, 59, 528,
541, 580.

Redbreast, 384.

Redhead, 57, 523, 573.

Redstart, 69, 417, 553.

Redtail, Western, 60, 535.

Redwing, Vera Cruz,

Reed, Bessie P., growth develop-
ment and reactions of young
Great Horned Owls, 14-31.

Regulus, 356.
calendula calendula, 144, 418.
593.
satrapa satrapa, 86, 418.

'Revue Francaise d'Ornithologie',
reviewed, 164, 300, 471, 609.

Rhinocroilus, 459.

Rhipidura tricolor, 465.

Rhopias, 149.

Rhopochares, 149.

Rhynchosphanes mccowni, 239.

Richmondena, 257.

Ridgway, Robert, diagnosis of a
new genus of Buteonine hawks,
585.

Ridgwayia, 355.

Riley, J. H., notice of his 'A Col-
lection of Birds from North and
North-central Celebes, 154; notice

of his 'A New Spotted Babbler
from Siam,' 155; notice of his
'Three New Birds from Western
China,' 291; a new hazel grouse
from the province of Szechwan,
China, 422.

Ringneck,
Riparia riparia, 63, 67, 86-94.

Rishel, J. B., notes on the Water
Ouzel (*Cinclus mexicanus*) in the
mountains of Colorado, 142.

Rissa tridactyla, 279.

Riu Kiu Islands, birds of, 597.

Road-runner, 546.

Robin, 70, 216, 227, 278, 281, 418,
451, 591.
Southern, 74.
Western, 64.

Rosen, V., Northern Pileated Wood-
pecker in Massachusetts, 586.

Rosen, Victor, and Ogburn, Charl-
ton, Jr., Black Tern at Brooklyn,
N. Y., in spring, 441.

Rough-leg, Ferruginous, 536.

Rowan, William, danger in bird
traps, 171.

Royal Australasian Ornithologists'
Union, meeting of, 175, 482.

Rubicola minor, 408.

Rupornis, 585.
ridgwayi, 585.

Rhynchosops nigra, 125, 261, 441,
520, 539.

SAGE, John Hall, sketch of R. O.
Morris, 480; obituary of, 613.

Salpinctes, 357.

Salvadori, Tommaso, life and bib-
liography of, 158.

Sanderling, 126, 529, 542, 556, 582.

Sandpiper, Baird's, 528.
Buff-breasted, 146, 530.
Least, 528.

Pectoral, 528.

Purple, 82, 267.

Red-backed, 529.

Sandpiper, Semipalmated, 529, 582.
 Solitary, 408, 529.
 Spotted, 59, 65, 230, 408, 531, 580, 581, 582.
 Stilt, 59, 146, 240, 528, 542, 556.
 Western, 529, 562.
 Western Solitary, 530.
 White-rumped, 528.

Sapsucker, Yellow-bellied, 410.

Sass, H. R., White-crowned Sparrow in South Carolina, 590.

Saucerottea tobaci erythronota, 607.

Saunders, W. E., obituary of W. D. Hobson, 175.

Savage, James, European Widgeon (*Mareca penelope*) at Niagara Falls, N. Y., 263.

Sayornis phoebe, 66, 411, 548.

Saxicola, 355.

Scardafella inca, 534, 544.

Scaup, 523.
 Greater, 574.
 Lesser, 58, 523, 540, 574, 581.

Schiöler, E. Lehn, notice of his proposed 'Birds of Denmark,' 483.

Schorger, A. W., some summer birds of Lake Owen, Bayfield County, Wisconsin, 64-70; Barn Owl breeding at Madison, Wis., 131.

Sclater, W. L., notice of his 'Aves' in the Zoological Record, 456.

Sclateria, 149.

Scoter, American, 575, 579.
 Black, 575.
 Surf, 576.
 White-winged, 442, 576.

Scytalopus, 156.
 latrans, 149.

Seedeater, Sharpe's, 551.

Seiurus aurocapillus, 69, 85, 416.
 motacilla, 416.
 noveboracensis, 416.
 n. notabilis, 552.

Setopaga ruticilla, 69, 417, 553.

Shearwater, Audubon's, 123.
 Sooty, 123.

Sherman, Althea R., review of her papers on the House Wren problem, 460.

Shoveller, 57, 522, 540, 572.

Shrike, Great Northern, 277.
 Migrant, 68, 414.
 White-rumped, 63.

Sialia sialis sialis, 70, 418.

Sicalis, 155.
 arvensis, 155.
 flaveola, 254.
 f. holti, 254.
 pelzelni, 254.

Simon, Eugene L., obituary, 478.

Sipia, 149.

Siskin, 412.
 Pine, 67.

Sitta canadensis, 86, 417.
 carolinensis carolinensis, 417.

Sittidae, 357.

Sittiparus varius koreensis, 291.

Skimmer, Black, 125, 261, 314, 441, 520, 539.

Skinner, Milton P., notice of his 'Birds of Yellowstone National Park,' 455.

Smyth, Ellison A., White-crowned Sparrow in Montgomery Co., Virginia in January, 275.

Snethlagea, 600.

Snipe, Wilson's, 281, 408, 528, 556.

Snyder, L. L., the Brown Pelican (*Pelecanus occidentalis*) in Ontario, 124.

Somateria molliss dresseri, 82, 279.
 spectabilis, 264, 575.

Song, bird, 320-326.

Sora, 58, 527, 541.

'South Australian Ornithologist,' reviewed, 164, 300, 471, 609.

South Carolina, birds of, 265, 270, 271, 311-319, 578, 590.

Sparrow, Bachman's, 413.
 Black-throated, 551.

Sparrow, Chipping, 67, 84, 136, 227, 280, 413.
 Clay-colored, 63, 67, 144.
 English, 227, 412, 591.
 Field, 216.
 Fox, 413, 451.
 Grasshopper, 412.
 Harris's, 145, 275.
 Henslow's, 420, 590.
 Lark, 413.
 Lincoln's, 413, 562.
 Mountain Song, 447.
 Nevada Savannah, 62.
 Savannah, 412.
 Song, 67, 71, 85, 213, 227, 281, 413, 451.
 Swamp, 247, 413.
 Texas, 551.
 Tree, 413.
 Vesper, 67, 412.
 Western Grasshopper, 63.
 Western Vesper, 62.
 White-crowned, 275, 413, 590.
 White-throated, 67, 413, 447.
Spatula clypeata, 57, 522, 540, 572.
Speckle-belly, 577.
Speotyto cunicularia hypogaea, 61.
Sphyrapicus varius varius, 410.
Spinus pinus, 67.
 p. *pinus*, 412.
Spiza americana, 63, 414.
Spizella monticola monticola, 413.
 pallida, 63, 67, 144.
passerina passerina, 67, 84, 136, 280, 413.
 pusilla *pusilla*, 413.
Spoonbill, European, 384.
 Roseate, 524, 540.
Sporophila moreletti sharpei, 551.
Sprigtail, 573.
Sprunt, Alexander, Jr., an avian city of the South Carolina coast 311-319; curious occurrence of Chimney Swift, 587; Man-o'-war Bird in South Carolina, 578.
Squatarola squatarola, 531, 582.
 Starling, 134, 227, 271, 272, 273, 376, 446, 447, 463, 464.
Starnoenas, 396.
Steganopus tricolor, 58, 126, 267, 527, 541.
Stelgidopteryx serripennis, 414.
 Stephenson, Mrs. Jesse, Glossy Ibis in Colorado, 442.
Stercorarius parasiticus, 569.
Sterna antillarum, 520, 539, 570.
 cantiaca, 383.
 caspia, 569.
 caspia imperator, 78, 554.
 fluviatilis, 383.
 forsteri, 55, 520, 539, 569.
 hirundo, 383, 520, 555.
 maxima, 520, 539.
 sandvicensis, 383.
 s. *acuflavida*, 520, 539.
Stilt, Black-necked, 59, 528, 541.
 Stoddard, H. L., notice of his 'Progress of Cooperative Quail Investigation, 1924,' 293; personal notice, 484.
 Stone, Witmer, diving of Spotted Sandpiper, 581; Kingfisher and Hawk, 586; obituary of Charles B. Penrose, 307.
 Stoner, Dayton, observations and banding notes on the Bank Swallow, 86-94; notice of his reports on Fiji and New Zealand birds, 294; notice of his sketch of the life of Audubon, 457.
 Stork, White, 361.
 Strabala, Lony B., the Starling (*Sturnus vulgaris*) at Leetonia, Ohio, 447.
 Stresemann, Erwin, notice of recent papers by, 462.
Strix aluco nivipetens, 291.
 varia varia, 410.
Sturnella magna magna, 67, 412.
 m. *hoopesi*, 550.
neglecta, 62, 465.
Sturnopaster capensis dehrae, 608.

273,
267,
ossy
70.
256-
541.
his
quail
per-
tted
and
Charles
and
Bank
his
land
etch
aling
onia,
cent
2.
608.

Sturnus vulgaris, 134, 271, 272, 273, 376, 447.
Sumner, F. B., review of his 'The Stability of Subspecific Characters,' 286.
Sushkin, Peter P., the Evening Grosbeak (*Hesperiphona*) the only American genus of a Palaearctic group, 356-261.
Suthora, 343.
Sutton, George Miksch, American Egret and Little Blue Heron in Brooke Co., W. Va., 129; notice of his 'A Year's Program for Bird Protection,' 463; Egret and Little Blue Heron, in central Pennsylvania, 583; swimming and Sandpiper, 580; strange nesting site of Chimney Swift, 586.
Swallow, 379.
 Bank, 63, 67, 86, 94, 420.
 Barn, 63, 67, 85, 414, 551.
 Cliff, 63, 275, 414.
 Rough-winged, 414.
 Tree, 68, 145, 551.
 Violet-green, 137.
Swan, Trumpeter, 455, 577.
 Whistling, 137, 147, 524, 577.
Swann, H. Kirke, review of his 'A Monograph of the Birds of Prey,' 149, 288, 457.
Swift, Black, 497-516.
 Chimney, 61, 66, 213, 227, 411.
 586, 587.
Synallaxis azarae infumata, 463.

TACHYGINETA thalassina lepida, 137.
Taeniotriccus, 600.
Tanager, Hepatic, 551.
 Scarlet, 67, 414.
 Summer, 414.
Tanagra chalybea, 283.
 diademata, 283.
Tangara, 588.
Tangavarius aeneus involucratus, 549.
Taylor, Walter P., the breeding and wintering of the Pallid Horned Lark in Washington state, 349-353.
Teal, Blue-winged, 57, 419, 572.
 Cinnamon, 263, 441, 522.
 European, 367.
 Green-winged, 57, 82, 419, 572, 522.
Tephrodornis gularis latouchei, 608.
Tern, Black, 55, 441, 520, 570.
 Cabot's, 520, 539.
 Common, 520, 555.
 Couch's Caspian, 78, 519, 539, 554, 569.
 Forster's, 55, 520, 539, 569.
 Gull-billed, 519, 538, 558.
 Least, 318, 520, 539, 570.
 Royal, 314, 520, 539.
Terrornis, 295.
Tetrao urogallus karelicus, 294.
Tetrastes sewerzowi **secunda**, 423.
Texas, birds of, 263, 432-440, 519-536, 537-555.
Thamnophilus, 149.
Thrasher, Brown, 64, 69, 227, 417.
 Curve-billed, 553.
 Sennett's, 553.
Thrush, Gray-cheeked, 418.
 Hermit, 69, 281, 418, 451.
 Olive-backed, 418.
 Wood, 227, 418.
 Wilson's, 420.
Thryomanes bewickii bewickii, 73, 417.
 b. cryptus, 554.
Thryophilus, 600.
Thryothorus, 295, 357.
 ludovicianus alleghani, 169.
 l. lomitensis, 553.
 l. ludovicianus, 417.
Tinamou, Variegated, 601.
Titmouse, Blue, 384.
 Gray, 593.
 Sennett's 554.
Todiramphus gertrudae, 292.

Todd, W. E. Clyde, *Progne elegans* vs. *Progne furcata*, 276; two new birds for Porto Rico, 282; notice of his 'Sixteen New Birds from Brazil and Guiana', 600.

'Tori,' reviewed, 302.

Totanus flavipes, 59, 529, 541. *melanoleucus*, 529.

Towhee, 67, 414, 602.

Townsend, Charles W., Black Vulture at Grand Manan, New Brunswick, and Ipswich, Mass., 130; Richardson's Owl at Grand Manan, N. B., 131; notes on the nesting habits of the Northern Pileated Woodpecker, 132; notice of his 'Sand Dunes and Salt Marshes,' 455.

Toxostoma, 356.
 curvirostre curvirostre, 553.
 longirostre sennetti, 553.
 rufum, 64, 69, 417.

Tricholaema hirsutum, 291.
 h. chapini, 291.

Tringa canutus, 240.
 solitaria solitaria, 408, 529.
 s. cinnamomeus, 529.

Troglodytes, 156.
 aedon aedon, 417.
 a. parkmani, 64, 69.

Trogonurus, 156.

Tryngites subruficollis, 146, 530.

Tugarinow, A., and Buturlin, S., notice of their 'Ornithology of the Yenisee Government,' 460.

Turdus, 600.

Turkey, Ocellated, 293.
 Rio Grande, 533.
 Wild, 419.

Turnstone, Ruddy, 533, 582.

Turtur chinensis, 160.

Tympanuchus americanus, 60.

Tyranniscus, 155.

Tyrannus melancholicus couchi, 547.

Tyrannus tyrannus, 61, 66, 83, 271, 320, 411, 547.
 verticalis, 61, 271.

Tyto pratincola, 131, 177, 269, 409, 533.

U. S. BIOLOGICAL SURVEY, notice of publications of, 153; annual report noticed, 293.

Urner, Charles A., notes on two ground nesting birds of prey, 31-41.

Urotriorchis, 457.

VAN ROSSEM, A. J., observations on the Spotted Sandpiper, 230-232.

Van Tyne, Josselyn, Bell's Vireo in Michigan, 277; notice of his 'Notes on the Birds of Charlevoix Co., Mich.', 460.

Von Lengerke, Justus, Goshawks in northern New Jersey, 131.

Veery, 69.

Venezuela, birds of, 156.

Verdin, 554.

Vermivora, 600.
 browni, 251.
 celata celata, 420.
 chrysoptera, 420.
 crissalis, 251.
 peregrina, 415, 552, 592.
 pinus, 415.
 rubricapilla rubricapilla, 420, 552.
 ruficapilla ruficapilla, 68, 593.

Vermont, birds of, 592.

Vireo, 353.
 bellii bellii, 277, 449.
 griseus griseus, 415.
 g. micrus, 552.
 huttoni obscurus, 353.

Vireo, Bell's, 277, 449.
 Blue-headed, 415.
 Mountain, 72.
 philadelphia, 420.

271,
409,
ce of
nal
two
31-
ions
230-
oo in
his
arle-
wks
1.

420,
503.

Vireo, Red-eyed, 68, 227, 414.
Small White-eyed, 552.
Warbling, 68, 414.
White-eyed, 415.
Yellow-throated, 415.
Vireolanius, 353.
Vireosylva, 341, 354.
 gilva gilva, 68, 414.
 olivacea, 68, 414.
 philadelphica, 420.
Virginia, birds of, 275, 580.
Volatina, 155.
Vulture, Black, 130, 211, 409, 442,
 534, 545.
 Turkey, 211, 409, 442, 534, 545.

WARBLER, Bay-breasted, 415, 552.
 Black and White, 69, 415, 552.
 Blackburnian, 416, 552, 593.
 Black-poll, 281, 552.
 Black-throated Blue, 68, 415.
 Black-throated Green, 282,
 416, 552.
 Blue-winged, 415.
 Cairn's, 73.
 Canada, 69, 73, 417, 553.
 Cape May, 281, 415, 450.
 Cerulean, 147, 415, 552.
 Chestnut-sided, 69, 415, 553.
 Connecticut, 140, 420, 450.
 Golden-winged, 420.
 Hooded, 416.
 Kentucky, 416.
 Macgillivray's, 277.
 Magnolia, 415, 552, 593.
 Mourning, 69, 281, 282, 416.
 Myrtle, 68, 216, 281, 415, 552.
 Nashville, 68, 420, 552, 593.
 Northern Parula, 281.
 Orange-crowned, 281, 420.
 Palm, 281, 416, 552.
 Parula, 420.
 Pine, 69, 140, 281, 420.
 Prairie, 144, 416.
 Prothonotary, 138, 139, 140.
 Sycamore, 416.

Warbler, Tennessee, 415, 552, 592.
 Yellow, 63, 281, 415, 552.
 Yellow Palm, 85, 281.
 Yellow-throated, 591.
 Wilson's, 281, 420.
 Worm-eating, 415.
Warren, B. H., Avocet at Wallop's
 Island, Va., 580.
Water-Thrush, 416.
 Grinnell's, 552.
 Louisiana, 416.
 Northern, 281.
Water-Turkey, 520, 539.
Washington, birds of, 349-353,
 497-516.
Waxwing, Cedar, 63, 67, 71, 85,
 414, 551.
Wayne, Arthur T., another South
 Carolina winter record for the
 Crested Flycatcher (*Myiarchus*
 crinitus) 271; the Starling (*Stur-
 nus vulgaris*) on the coast of
 South Carolina, 271.
Weisman, T. Walter, personal
 notice, 483.
West Virginia, birds of, 129.
Weston, Francis M., Jr., Golden
 Eagle in Florida, 443.
Wetmore, Alexander, Wilson's Pet-
 rel in Maryland, 262; dates of
 publication of Mikan's Flora and
 Fauna of Brazil, 283; another
 record for the genus *Corvus* in
 St. Croix, 446; the status of
 Amoromyza Richmond, 450; per-
 sonal mention, 621.
Wheeler, H. E., review of his
 'The Birds of Arkansas,' 285.
Whip-poor-will, 66, 70, 411.
White, F. B., notice of his 'Birds
 of Concord, New Hampshire,'
 288.
Whittle, Charles L., domestic af-
 fairs of *Spizella p. passerina*, 136.
Widgeon, European, 80, 263.
Willet, 530, 583.

Willet, Western 59, 530, 543.
 Williamson, Henry, review of his 'Sun Brothers,' 602.
 'Wilson Bulletin,' reviewed, 162, 298, 466, 606.
 Wilson Ornithological Club, meeting of, 175.
 Wilson, Alexander, historical notes on, 606.
 Wilson, Etta S., Black Vulture (*Coragyps urubu*) in Michigan, 442.
 Wilsonia canadensis, 69, 73, 417, 553.
 citrina, 416.
 pusilla pusilla, 420.
 Winge, Adolf Herluf, obituary, 174.
 Wisconsin, birds of, 64-70, 131.
 Wood, Norman A., further notes on North Dakota birds, 145. Vireo bellii bellii, at Detroit, Mich., 449; new and rare birds for North Dakota, 452.
 Wood, Casey A., a fossil bird's egg from the post-tertiary mud-rocks of Fiji, 401-404; correction, 129.
 Woodcock, 213, 408.
 European, 608.
 Woodpecker, Arctic Three-toed, 145.
 Downy, 61, 66, 410, 464.
 Golden-fronted, 546.
 Hairy, 66, 410.
 Northern Pileated, 132, 269, 586.
 Pileated, 211, 410, 216.
 Red-bellied, 411.
 Red-headed, 66, 227, 410.
 Texas, 546.
 Wren, Bewick's, 73, 417.
 Cactus, 553.
 Wren, Carolina, 142, 417.
 House, 213, 227, 417, 604.
 Lomita, 553.
 Prairie Marsh, 64.
 Short-billed Marsh, 420, 593.
 Texas, 553.
 Western House, 64, 69.
 Winter, 73, 278, 417.
 Worthington's Marsh, 312.
 Wyoming, birds of, 455.
 XANTHOCEPHALUS xanthocephalus, 62, 549.
 Xanthoura, 208.
 luxuosa glaucescens, 548.
 YELLOW-THROAT, Maryland, 69, 86, 416, 557.
 Northern, 563.
 Rio Grande, 552.
 Yellow-legs, 59, 529, 542.
 Greater, 529.
 Yoder, Wm. and Gaede, A. Henry, Purple Sandpiper at Cape May, N. J., 267.
 ZAMELODIA, 257.
 ludoviciana, 67.
 Zeledonia, 355.
 Zenaida zenaida, 446.
 Zenaidura macroura carolinensis, 60, 148, 409.
 macroura marginella, 533, 544.
 Zimmer, John T., notice of his 'Two New Birds from Peru,' 463; notice of his 'An Earlier name for *Pipra opalizans*,' 463.
 Zonotrichia albicollis, 67, 413, 447.
 leucophrys leucophrys, 413, 590.
 querula, 145, 275.
 Zoological Record, 483.

ERRATA.

Page 66, line 37, for "PERVEE," read PEWEE.
" 157, " 4, for "Micromonicha," read *Micromonacha*.
" 159, " 26, for "Athiospar," read *Aethiopsar*.
" 170, " 10, for "coromandilicus," read *coromandelicus*.
" 260, " 14, for "HESPERIPHOMA," read *HESPERIPHONA*.
" 408, " 20, for "Ribicola," read *Rubicola*.
" 410, " 18, for "americana" read *americanus*.
" 441, " 16, for "niger," read *nigra*.
" 311, owing to an error in numbering there is no Plate XI.

DATES OF PUBLICATION.

Vol. XLI, No. 4—Oct. 3, 1924.
" XLII, No. 1—Jan. 2, 1925.
" XLII, No. 2—April 3, 1925.
" XLII, No. 3—July 6, 1925.



THE AUK

A Quarterly Journal of Ornithology

ORGAN OF THE AMERICAN ORNITHOLOGISTS' UNION

Edited by Dr. Witmer Stone

ACADEMY OF NATURAL SCIENCES, LOGAN CIRCLE

PHILADELPHIA, PA.

To whom all articles and communications intended for publication and all books and publications for review should be sent.

Manuscripts for leading articles must await their turn for publication if others are already on file, but they must be in the editor's hands at least six weeks before the date of issue of the number for which they are intended, and manuscripts for 'General Notes,' 'Recent Literature,' etc., not later than the first of the month preceding the date of issue of the number in which it is desired they shall appear.

Twenty-five copies of leading articles are furnished to authors free of charge. Additional copies or reprints from 'General Notes,' 'Correspondence,' etc., must be ordered from the editor.

THE OFFICE OF PUBLICATION

8 WEST KING STREET, LANCASTER, PA.

Subscriptions may also be sent to W. L. McAtee, Business Manager, 200 Cedar St., Maywood, via Cherrydale, Va. Foreign Subscribers may secure 'The Auk' through H. F. and G. Witherby, 326 High Holborn, London, W. C.

Subscription, \$4.00 a year. Single numbers, one dollar.

Free to Honorary Fellows, and to Fellows, Members, and Associates of the A. O. U., not in arrears for dues.

OFFICERS OF THE AMERICAN ORNITHOLOGISTS' UNION

President: JONATHAN DWIGHT, 43 W. 70th St., New York.

Vice Presidents: ALEXANDER WETMORE, National Zoological Park, Washington, D. C. JOSEPH GRINNELL, Museum of Vertebrate Zoology, Univ. of California, Berkeley, Calif.

Secretary: T. S. PALMER, 1939 Biltmore St., Washington, D. C.

Treasurer: W. L. MCATEE, 200 Cedar St., Maywood, via Cherrydale, Va.

SEPARATES FOR SALE

In order to meet a general demand for separates of the leading articles published in 'The Auk' arrangements have been made to furnish copies of any leading article beginning with the April 1920 issue at 25 cents each, post paid.

Orders for these separates should be addressed to the editor.

DR. WITMER STONE,

ACADEMY OF NATURAL SCIENCES,

LOGAN CIRCLE, PHILADELPHIA, PA.

MEETINGS OF THE A. O. U.

Since its organization in 1883 the American Ornithologists' Union has held one special and 42 annual meetings.

Meeting	Date	Place	Fellows Present	Total Membership
1	1883, Sept. 26-28	1st New York	21	23
2	1884, Sept. 30-Oct. 2	2d New York	16	143
3	1885, Nov. 17-18	3d New York	16	201
4	1886, Nov. 16-18	1st Washington	20	251
5	1887, Oct. 11-13	1st Boston	17	284
6	1888, Nov. 13-15	2d Washington	20	298
7	1889, Nov. 12-15	4th New York	20	400
8	1890, Nov. 18-20	3d Washington	20	465
9	1891, Nov. 17-19	5th New York	14	493
10	1892, Nov. 15-17	4th Washington	20	557
11	1893, Nov. 20-23	2d Cambridge	17	582
12	1894, Nov. 12-15	6th New York	15	616
13	1895, Nov. 11-14	5th Washington	19	667
14	1896, Nov. 9-12	3d Cambridge	14	673
15	1897, Nov. 8-11	7th New York	18	679
16	1898, Nov. 14-17	6th Washington	21	695
17	1899, Nov. 13-16	1st Philadelphia	16	744
18	1900, Nov. 12-15	4th Cambridge	19	748
19	1901, Nov. 11-14	8th New York	18	738
20	1902, Nov. 17-20	7th Washington	25	753
20a	1903, May 15-16	1st San Francisco	7	—
21	1903, Nov. 16-19	2d Philadelphia	19	775
22	1904, Nov. 28-Dec. 1	5th Cambridge	17	808
23	1905, Nov. 13-16	9th New York	17	860
24	1906, Nov. 12-15	8th Washington	24	750
25	1907, Dec. 9-12	3d Philadelphia	20	850
26	1908, Nov. 16-19	6th Cambridge	17	888
27	1909, Dec. 6-9	10th New York	19	866
28	1910, Nov. 14-17	9th Washington	23	897
29	1911, Nov. 13-16	4th Philadelphia	18	887
30	1912, Nov. 11-14	7th Cambridge	18	929
31	1913, Nov. 10-13	11th New York	28	992
32	1914, Apr. 6-9	10th Washington	27	1101
33	1915, May 17-20	2d San Francisco	11	1156
34	1916, Nov. 13-16	5th Philadelphia	26	830
35	1917, Nov. 12-15	8th Cambridge	21	891
36	1918, Nov. 11	12th New York	14	953
37	1919, Nov. 10-13	13th New York	28	1024
38	1920, Nov. 8-11	11th Washington	25	1142
39	1921, Nov. 7-10	6th Philadelphia	25	1351
40	1922, Oct. 23-27	1st Chicago	24	1457
41	1923, Oct. 8-12	9th Cambridge	25	1652
42	1924, Nov. 10-13	1st Pittsburgh	26	1637

The next regular meeting—the 43d Stated—will be held at New York City, November 9-12, 1925.

